Canadian Coast Guard Auxiliary

SAR TRAINING

Manual

Canadian Coast Guard

Central & Arctic

2003

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The foundational work for the present SAR manual originated in the early 1980's. At that time:

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were the contributing authors. Much of the original work is still in use with perhaps a different format.

A CCGA *ad hoc* Training Committee developed new editions of the SAR 1 and SAR 2 manuals in the late 1990's. The members of the committee included, at various times:

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The work of the committee is now in the hands of Mark Gagnon (CCG Training Officer) and Don Limoges (CCGA Director of Training) who have continued to update and revise the SAR training materials. They have been assisted by Duff Dwyer, Tony Buckley and Jim Gram and the Regional Training Coordinators.

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Module 1

ABBREVIATIONS AND GLOSSARY

Alphabetical Order by Abbreviation

AOR	Area of Responsibility
C	Coverage Factor
CASARA	Civil Air Search and Rescue Association
CCG	Canadian Coast Guard
CCGA	Canadian Coast Guard Auxiliary
CCGC	Canadian Coast Guard Cutter
CFB	Canadian Forces Base
CGRS	Coast Guard Radio Station (also known as MCTS)
CHS	Canadian Hydrographic Service
CMCC	Canadian Mission Control Centre
CSA	Canada Shipping Act
CSP	Commence Search Point
CSS	Coordinator Surface Search
DFO	Department of Fisheries & Oceans
DMB	Datum Marker Buoy
DND	Department of National Defense
DR	Dead Reckoning
DSC	Digital Selective Calling
DTG	Date Time Group
EPIRB	Emergency Position Indicating Radio Beacon
GEOSAR	Geostationary Search & Rescue Satellite
GMDSS	Global Maritime Distress and Safety System
GPIRB	Global Position Indicating Radio Beacon
HF	High Frequency
ICAO	International Civil Aviation Organization
ICS	Incident Command Structure
IMO	International Maritime Organization
IAMSAR	International Aeronautical and Maritime Search & Rescue
IRB	Inshore Rescue Boats
JRCC	Joint Rescue Coordination Centre
KTS	Knots per hour

LF	Low Frequency
LKP	Last Known Position
LOP	Line of Position
MARB	Marine Assistance Request Broadcast
MCTS	Marine Communications and Traffic Services
MF	Medium Frequency
MMSI#	Maritime Mobile Service Identity Number (DSC)
MRSC	Marine Rescue Sub-Centre
NM	Nautical Miles
NDHQ	National Defense Headquarters
NSP	National SAR Program
NWPA	Navigable Waters Protection Act
OSC	On-scene Coordinator
PIW	People in Water
POB	People on Board
RCMP	Royal Canadian Mounted Police
RTB	Return to Base
S	Track Spacing
SAR	Search and Rescue
SART	Search & Rescue Transponder
SLDMB	Self Locating Datum Marker Buoy
SITREP	Situation Report
SM	Search Master
SOG	Standard Operating Guideline
SOLAS	International Convention for Safety of Life at Sea
SOP	Standard Operating Procedure
SRR	Search & Rescue Region
SRU	Search and Rescue Unit
TC	Transport Canada
UTC	Coordinated Universal Time
VHF	Very High Frequency
W	Corrected Sweep Width
Wu	Uncorrected Sweep Width

General Glossary

AERONAUTICAL INCIDENT
All SAR incidents involving aircraft.

AERONAUTICAL COORDINATOR
A person at JRCC responsible for planning, coordinating and controlling the response to aeronautical incidents.

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CAPTAIN
A generic term applied to the master of a ship, pilot in command of an aircraft, commanding officer of a warship or the operator of any other craft.

CASUALTY RECEPTION POINT (CRP)
An intermediate forward location where a large number of survivors can be treated prior to evacuation to appropriate medical facilities.

COORDINATED SAR SYSTEM
The facilities, equipment and procedures established in each SRR to coordinate the response to SAR incidents

COORDINATOR SURFACE SEARCH
When more than one vessel or aircraft has been tasked to an incident JRCC may designate one unit to coordinate the on scene operation. If the unit is a primary or secondary SAR vessel or aircraft it is known as the On Scene Commander. If it is a vessel other than a primary or secondary SAR vessel it is known as the Coordinator Surface Search.

COXSWAIN
The master of a search & rescue unit.

DATUM
The most probable location of a search object or person, corrected for total drift at a specific time.

DISABLED
A situation wherein a vessel or aircraft afloat and not in distress or potential of distress has lost all means of propulsion or steering control to such a degree as to be incapable of proceeding to safety without assistance.

DISTRESS

A SAR incident wherein there is a reasonable certainty that one or more individuals are threatened by grave and imminent danger and require immediate assistance.

DITCHING

The forced landing of an aircraft on water.

ELECTRONIC EMERGENCY LOCATOR TRANSMITTER (ELT)

An emergency radio beacon designated for use by aircraft.

EMERGENCY POSITION INDICATING RADIO BEACON (EPIRB)

An emergency radio beacon designated for use by vessels.

GLOBAL POSITION INDICATING RADIO BEACON (GPIRB)

An emergency radio beacon designated for use by vessels which transmits its actual location.

HUMANITARIAN ASSISTANCE

An incident not directly related to an air or marine incident which requires the provision of assistance by SAR resources to save life or relieve human suffering, including the provision of a medevac, transportation of human organs, relief or medical supplies.

JOINT RESCUE COORDINATION CENTRE (Also known as JRCC)

A unit responsible for providing efficient organization of search and rescue resources for coordinating the conduct of search and rescue operations within a SAR region.

MAJOR AIR DISASTER (MAJAID)

An aircraft accident occurring in Canada which because of the size of the accident requires augmentation of established SAR resources.

MAJOR MARITIME DISASTER

A marine incident which because of the number of people involved requires augmentation of established SAR resources.

MARITIME COORDINATOR

A person at JRCC responsible for planning, coordinating and controlling the response to maritime incidents.

MARITIME INCIDENT

A SAR incident involving a vessel or a person, including a Medical Evacuation of a person (s) from a vessel.

MARITIME RESCUE SUB-CENTRE (MRSC)

A subordinate unit to a Rescue Coordination Centre (JRCC) established to complement the JRCC within a specific portion of a search and rescue region.

MEDEVAC

The evacuation of injured or stranded persons from isolated areas or the recovery of sick or critically injured persons from vessels at sea.

OFFICE OF BOATING SAFETY (OBS)

A group of CCG employees responsible for providing SAR prevention logistics and organization.

ON SCENE COMMANDER (OSC)

When more than one vessel or aircraft has been tasked to an incident JRCC may designate one unit to coordinate the on scene operation. If the unit is a primary or secondary SAR vessel or aircraft it is known as the on scene commander. If it is a vessel other than a primary or secondary SAR vessel or aircraft it is known as the Coordinator Surface Search.

OTHER SAR RESOURCES

Resources other than primary or secondary which from time to time participate in SAR activities when required. This includes municipal and provincial resources, civil volunteers and partially funded federal government resources such as the CCGA or CASARA.

PRIMARY SAR RESOURCES

Aircraft, vessels or formations established and equipped specifically for SAR and staffed with trained SAR crews. Primary SAR resources are under the direct operational control of the SRR commander for SAR tasking.

RESCUE COORDINATION

The integration of efforts of SAR facilities and resources to achieve concerted and harmonized resolution of SAR incidents in an effective and efficient manner.

RESCUE SPECIALIST

Specially trained rescue personnel who are a key part of a primary SAR vessel. The military equivalent carried on board SAR aircraft are known as SAR TECH's.

SEARCH AND RESCUE REGION (SRR)

A specified geographical area in which SAR operations are coordinated and controlled by a designated Rescue Coordination Centre.

SAR INCIDENT

A reported air or maritime incident which requires a response by the SAR system.

SAR MISSION

The task assigned to a SAR resource by a JRCC in response to a SAR incident. A SAR mission starts with formal tasking by JRCC and is normally defined in scope and time.

SAR OPERATIONS

When the response to a distress incident requires the utilization of more than one resource and/or numerous SAR missions are anticipated during the resolution of the incident, it is considered a SAR operation.

SAR RESOURCE

A resource capable of responding to a search and rescue incident.

SAR UNIT

A unit specializing in the provision of search and rescue services.

SEARCH INITIATOR BUOY (SIB)

A maritime EPIRB designed to float free from a sinking vessel while remaining attached to it by a reel-out cable. If the depth of the water is greater than the length of the cable, the SIB will break free, and float to the surface.

SECONDARY SAR RESOURCES

Aircraft or vessels established and equipped for other than SAR, but which can be expected to respond (when available) to SAR tasking. They include multi-tasked government resources.

SELF LOCATING DATUM MARKER BUOY

A datum marker buoy launched by either an aircraft or SRU vessel and used to measured the rate of drift of either a POB or a life-raft. The buoy transmits a signal to a satellite, which in turn transmits the data to the appropriate JRCC.

SRR COMMANDER / RESCUE COORDINATOR

The military commander designated by NDHQ as being responsible for SAR operations within a search and rescue region.

SPOTTERS

Personnel aboard a SAR aircraft or vessel to assist in the conduct of a visual search.

STAND / STOOD DOWN

The order originating from the master of the vessel in distress or JRCC which releases the resource from the incident.

Brebeuf Island – Georgian Bay **(Matt Inwood – IRB-1000)**

Additional Notes

Module 2

SAR Responsibilities and Resources

Responsibilities

The Department of National Defence has the primary responsibility for Search and Rescue in Canada. The Minister of Fisheries and Oceans has the authority to appoint rescue coordinators. Joint Rescue Coordination Centres (JRCC) are located at Halifax, Trenton and Victoria. There are two MRSC (Marine Rescue sub-centres); one at St. John's and one at Quebec City.

QUICK FACTS

- *DND responsible for SAR*
- *DND provides air element*
- *CCG provides marine element*
- *Joint Rescue Coordination Centres (Halifax, Trenton, Victoria)*
- *MR Sub-Centres (St. John's, Quebec)*

The DND provides the air element of SAR in the form of fixed-wing and rotary-wing aircraft with highly skilled flight crews and Search and Rescue Technicians. The CCG provides the marine element of SAR in the form of a wide variety of ships, cutters and lifeboats with crews trained to a variety of tasks including Rescue Specialists.

Resources

The Canadian Coast Guard (CCG) and the Department of National Defence (DND) have organized resources into three levels; **primary; secondary** and **other**. In the event of an incident, a coordinator at JRCC will determine the resources that will be tasked to respond based on the exact nature of the incident. The determining factors include:

- location
- weather conditions
- number of persons involved
- availability of resources
- severity of the incident
- accessibility of the incident
- capabilities of resource

QUICK FACTS

- ***PRIMARY RESOURCES*** *(Cutters, IRB)*
- ***SECONDARY RESOURCES*** *(Government vessels)*
- ***OTHER RESOURCES*** *(CGA, Regional Police)*

Primary Resources

Primary resources refer to all vessels or aircraft whose main function is Search and Rescue operations. This includes both the Canadian Coast Guard and Department of National Defense (DND). For the CCG, this includes all cutters and Inshore Rescue Boats (IRB). They are crewed 24 hrs./day and operational within 30 minutes. The cutter facilities are operational during the months of April through December while the IRB facilities are operational during the months of May through Labour Day. These primary facilities are located throughout the Great Lakes system.

CCG Cutters

- Kingston - Eastern Lake Ontario
- Cobourg - Central Lake Ontario
- Port Weller – Western Lake Ontario
- Port Dover – Eastern Lake Erie
- Amherstburg – Western Lake Erie
- Goderich - Lake Huron South
- Tobermory – Lake Huron/Georgian Bay
- Meaford – Georgian Bay
- Thunder Bay – Western Lake Superior

Inshore Rescue Boats

- Hill Island – St. Laurence River
- Long Point – Lake Erie
- Thames River – Lake St. Clair
- Port Lambton – St. Clair River
- Brebeuf Is. - Georgian Bay South
- Gereaux Island (Britt) – Georgian Bay North

DND primary resources operating out of Canadian Forces Base (CFB) Trenton and Winnipeg are part of the 424 and 435 Squadrons. The two aircraft types out of Trenton are rotary wing CH113 Labrador helicopters and fixed wing C130 Hercules aircraft. Only Hercules aircraft operate out of CFB Winnipeg.

Secondary Resources

Secondary resources are vessels or aircraft that belong to federal agencies but whose primary function is not SAR. These resources may be used when their proximity to an incident or the nature of the incident makes them the most effective option. In Central & Arctic Region, CCG vessels other than SAR vessels are Ice-breakers, Buoy Tenders and survey vessels. The names of these vessels are:

Secondary

- CCGS Gull Isle
- CCGS Cove Isle
- CCGS Caribou Isle
- CCGS Namao
- CCGC Limnos
- CCGC Shark
- CCGS Samuel Risley
- CCGS Griffon
- CCGS Simcoe
- CCG Helicopters
- All DND, RCMP (Ontario) and Parks Canada Vessels

Secondary resources include all other Federal Government Vessels under the control of various departments and agencies. Such agencies would include the RCMP., the Department of the Environment, the Department of Transport, Parks Canada, DND Aircraft & Ships Resources including people and vehicles. RCMP in Western provinces are under contract to the provinces and are considered as “other”.

Other Resources

Other resources include vessels operated by the **Coast Guard Auxiliary (CGA), Provincial, Regional and Municipal Police services** and vessels of opportunity. Also included are aircraft operated by CASARA. When **other** helicopter service is required for SAR it is obtained through other government agencies or hired from civilian resources.

CGA vessels are operated by volunteers who own their own vessels or crew on community supported vessels. The CGA is organized across Canada in five regions. Each region is autonomous as a corporation and is supported through a Contribution Agreement with the Department of Fisheries and Oceans. The five regions are; Newfoundland & Labrador, Maritimes, Quebec, Central and Arctic and Pacific. **Central and Arctic Region** includes the St. Lawrence River from the Quebec border west, including The Great Lakes, the waterways of Manitoba, Saskatchewan, Alberta, The North West Territories and Nunavut.

Through the Contribution Agreement CCG is mandated to:

- provide training in SAR
- provide training in boating safety
- provide reimbursement for the use of vessels on task
- provide certain administrative support for the CGA

the CGA is mandated to:

- provide acceptable vessels for SAR
- provide personnel with marine experience
- provide assistance in prevention activities

All vessels on the water are legally obligated to help vessels in distress. The rationale behind forming the CGA was that there were already people performing these acts of good will. It was then logical to establish an organization that would provide them with proper training and have them covered under insurance for any liability as rescuers. Note that CGA units and crews are not required to maintain a 24-hour watch, but JRCC can contact them through various means of communication.

Civil Air Search and Rescue Association

The Civil Air Search and Rescue Association (CASARA), is an organization similar to the CCGA. They are an aviation based resource utilized on both Air & Marine Search incidents. The Canadian Forces assists in the training of CASARA volunteers and the operational evaluation of certified members on a regular basis. CASARA members may be tasked for EPIRB homing missions, as spotters on military flights, or to provide fully manned civilian search aircraft as considered appropriate by the JRCC/SM. Under the CASARA agreement, TC remains responsible for training sessions relating to safe flying practices.

Search and Rescue (SAR) Tasks

Primary SAR Task

The responsibilities of the Canadian Coast Guard are defined in the National Search and Rescue Manual. It is in this manual that the National SAR Objective, printed below, is described.

"*To prevent the loss of life and injury through search and rescue alerting, responding and aiding activities which use public and private resources. Where possible, reasonable efforts will be made to minimize damage or loss of property, including where possible and directly related thereto, reasonable efforts to minimize damage to or loss of property; and by ensuring appropriate authority to aviation and marine safety through SAR loss of life programs focused on owners and operators most commonly involved in SAR incidents. The NSP will attempt to reduce the number and severity of SAR incidents*."

QUICK FACTS

CCG
SAR MANDATE

- *detect marine incidents*
- *coordinate & conduct SAR ops.*
- *provide marine resources*
- *provide OBS programs*

QUICK FACTS

ENABLING AGREEMENTS

- *International Civil Aviation Org. (ICAO)*
- *International Maritime Org. (IMO)*
- *Convention for Safety of Life at Sea (SOLAS)*

The **National Search and Rescue Objective** is met through two areas of activity:

1. SAR operations aimed at detection, response and rescue; and to coordinate and conduct SAR Operations.
2. SAR prevention, aimed at reducing the number and severity of SAR incidents through education.

CCG has the following **Primary SAR tasks**:

1. **Detect marine incidents** and in collaboration with DND to coordinate, control and conduct SAR operations in marine SAR incidents within the Canadian area of responsibility;
2. **Coordinate, conduct and control** SAR operations in Canada
3. **Provide marine resources** in the execution of SAR operations where applicable; and
4. **Coordinate, control and conduct SAR loss of life** programs to reduce the number and severity of marine SAR incidents.

Two responsibilities become apparent.

- **Firstly**, not only must the CCG provide the marine resources to respond to a SAR incident, but it must also have in place the processes to coordinate these resources so to be able to conduct a well planned search and rescue operation.
- **Secondly**, CCG must support a strong prevention program to reduce the occurrence of SAR incidents.

Secondary SAR Task

The Canadian Coast Guard has the secondary SAR task of providing SAR resources, when and where available, **to assist in humanitarian and civil incidents within provincial or municipal areas of responsibility**.

Rescue Manuals

Because Canada participates in a number of international organizations concerning search and rescue practices and policies, it must have well designed procedures to enable it to respond to any SAR incident. Canada is a member of the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO) and has agreed to adopt SAR standards and practices in accordance with the Convention on Civil Aviation and the Maritime SAR Convention (1979) and the International Convention for Safety of Life at Sea (SOLAS).

National Search and Rescue Manual

The purpose of the publication is to assist personnel of all federal departments and agencies involved in SAR to meet the SAR objectives of the Canadian Government. This manual presents federal SAR policy and describes the federal SAR organization and the interdepartmental structure to provide effective SAR. It presents the common procedures, techniques and terminology which have been developed to enhance the effectiveness of operations conducted by any combination of federal or federal and civilian SAR forces. Pertinent sections of national and international agreements which impinge on SAR are included as annexes. Also included are procedures which apply to specific components of Canadian SAR forces.

IAMSAR MANUALS

Volume 1 - Organization and Management
Volume 2 - Mission Coordination
Volume 3 - Search and Rescue Manual

The above listed manuals will replace the National Search and Rescue Manual. The three volumes are available for review through the District Training Coordinators.

A Canadian addendum to the IAMSAR publications will be available in the near future.

Joint Rescue Coordination Centres (JRCC)

The key word in JRCC is **Coordination**. JRCC must organize air resources as described in the International Civil Aviation Organization (ICAO). Marine resources must be organized, as defined under IMO, to respond to areas in Canadian waters such as the Great Lakes and the St. Lawrence River. In addition, JRCC's will coordinate SAR resource response to requests for humanitarian and civil incidents in accordance with national policy and regional directives.

JRCC coordinates these resources in order to control and conduct a response to a SAR incident. Once contacted, JRCC must formulate a search plan, task resources and monitor the operation in order to track the progress of the incident. It must keep all responders informed of the status of the search to be sure that responders have

accurate information on the nature of the distress. Following any operation, JRCC must collect information on the incident and record it in a statistical database. Other duties during non-response times include research into the latest SAR techniques and may also involve information on incidents regarding insurance or salvage claims.

JRCC Trenton

There are eight coordinators assigned to JRCC for the marine program. JRCC is available on a 24 hour basis. The telephone number for JRCC can be found inside the front cover of all telephone books - with the exception of Toronto. It is a toll free number and there is only one number regardless of whether the incident is marine or air related. The number for **JRCC Trenton is: 1-800-267-7270 and JRCC Halifax is: 1-800-565-1582.**

QUICK FACTS

A Coordinator may

- *Order vessel to report position*
- *Order vessel to search*
- *Control and coordinate*

Powers of JRCC Coordinators

The Canada Shipping Act (CSA) legalizes the authority vested in the JRCC by stating in Section 385 that the "Minister may designate persons, to be known as **rescue coordinators** to organize search and rescue operations in Canadian waters and on the high seas off the coasts of Canada". On being informed that a vessel, aircraft or survival craft thereof is in distress, or is missing in Canadian waters or on the high seas off any of the coasts of Canada under circumstances that indicate it may be in distress, these rescue coordinators may:

1. order all vessels within an area specified by him to report their position to him;
2. order any vessel to take part in a search for that vessel, aircraft or survival craft or to otherwise render assistance;
3. give such other orders as he deems necessary to carry out search and rescue operations for that vessel, aircraft or survival craft.

Trenton JRCC
1-800-267-7270

Halifax JRCC
1-800-565-1582

Powers of Vessel Master

The JRCC authority does not overrule the authority of the master of the vessel in distress which, as stated in section 384, of the Canada Shipping Act, *is:*

QUICK FACTS

Distress Situations

- ***JRCC may not overrule master***
- ***Master in charge- see CSA***
- ***Master shall assist***
- ***Master may requisition***

CSA - 384

1. The master of a Canadian Ship at sea, on receiving a signal from any source that a ship or aircraft or survival craft thereof is in distress, shall proceed with all speed to the assistance of the person(s) in distress, and informing them if possible that someone is doing so, but if the master is unable to or, in the special circumstances of the case, considers it unreasonable or unnecessary to proceed to their assistance, the master shall enter in the official log book the reason for failing to proceed to the assistance of the persons in distress.

CSA - 384

2. The master of any ship in distress may, after consultation, so far as possible, with the masters of the ships that answer his distress signal, requisition such one or more of these ships as he considers best able to render assistance, and it is the duty of the master of any Canadian Ship that is so requisitioned, to comply with the requisitions by continuing to proceed with all speed to the assistance of the person(s) in distress.

Considering Factors When Declining a Tasking:

- **Weather Factors are beyond capabilities -** eg., Wind, waves, icing
- **Lack of crew -** Do not operate a SRU single handed
- **Fatigue -** eg., Just finished a 12 hour shift
- **Impairment -** Alcohol - Medication
- **SRU Malfunction**
- **Navigation -** Unfamiliar waters/no charts for area

MODULE 3

COXSWAIN'S RESPONSIBILITIES

THE CANADA SHIPPING ACT

Much of this manual is based on the Canada Shipping Act which sets out the responsibilities for assistance in Canadian and adjacent waterways. Assistance to persons and vessels in distress is accepted as the normal practice of seafarers. Indeed, there is an obligation upon ships' masters that they render every assistance within their power in cases where a person or persons are in distress at sea. These obligations are set out in Sections 384, 385, 449 and 451 of the Canada Shipping Act.

Masters of Canadian vessels are also expected and required to accept the direction of land based coordination authorities under Section 385 of the Act. Although these obligations and responsibilities are expected of all ships' masters, it is especially important as members of the CGA that you familiarize yourselves with these sections of the Canada Shipping Act so that you are fully aware of these regulations and obligations.

RESPONSIBILITIES OF THE RESCUER

Life

The primary responsibility of the rescuer is the preservation of life, the lives of the SRU crew, as well as the lives of those in distress.

a) The Canada Shipping Act (CSA) section 384(1) requires "The master of a Canadian ship at sea, on receiving a signal from any source that a ship or aircraft or survival craft thereof is in distress, shall proceed with all speed to the assistance of the persons in distress informing them if possible that he is doing so, but if he is unable or, in the special circumstances of the case, considers it unreasonable or unnecessary to proceed to their assistance, he shall enter in the official log-book the reason for failing to proceed to the assistance of the persons in distress."

b) Government vessels and CGA go further than the CSA, in that they will, when possible, respond when their vessel is in port, as well as when at sea.

Record Keeping

A master is required to log all distress messages or signals and if they do not respond, he must log the reasons for not doing so (CSA 384).

Requisition

The CSA (384.(2) states: "The master of any ship in distress may, after consultation, so far as possible, with the masters of the ships that answer his distress signal, requisition one or more of those ships that he considers best able to render assistance, and it is the duty of the master of any Canadian ship that is so requisitioned to comply with the requisition by continuing to proceed with all speed to the assistance of the ship in distress."

Property

The CSA requires assistance to PERSONS in distress. However, as a secondary consideration and in the absence of commercial salvors, the CGA rescuer may be requested by the Canadian Coast Guard to aid a disabled vessel provided that to do so will not-jeopardize human life or endanger the rescuing vessel. The most common form of aid is towing to the nearest haven whose facilities can be engaged by the distressed vessel. The nearest haven shall be the location which can be safely reached in the prevailing conditions of weather, geography and least diversion of voyage which can provide the services required.

Responsibility Ceases

The rescuer's responsibility ceases when:

a) life is no longer in danger;

b) the distressed vessel is either free from danger or beyond further help.

Release from Obligation

The CSA (384(3)) states: "The master of a ship shall be released from the obligation imposed by subsection (1) when he learns that one or more ships other than his own have been requisitioned and are complying with the requisition."

Further Release

The CSA (384(4) states: "The master of a ship shall be released from the obligation imposed by subsection (1), and, if his ship has been requisitioned, from the obligation imposed by subsection (2), if he is informed by the persons in the ship in distress or by the master of another ship that he has reached those persons and that assistance is no longer necessary."

Premature Departure

If the rescuing vessel for her own safety is forced to depart the scene before all danger to persons has ceased, the rescuer has responsibility to inform JRCC of his action and broadcast either a MAYDAY RELAY or an urgency Communication (PAN PAN), or a Safety Communication (SECURITE) as the situation warrants.

The Responsible Master

. The master of the rescuing vessel will customarily set the procedure for the rescue operation, but the master of the disabled vessel may overrule the procedure if he so judges. If for the sake of safety of their respective vessels, the two masters cannot agree, it is then the duty of the rescuer to standby for the purpose of saving life and call JRCC for instructions

If engaged solely upon the rescue of property without lives being in danger, then the rescue vessel should not hesitate to abandon the rescue of property in order to respond to a higher priority of lifesaving, informing JRCC and broadcasting a Safety Communication relating to the abandoned craft when departing.

KEEPING A LOG

The master of a rescue vessel has responsibility to maintain records.

Deck Log

Should contain no less than:

1) Name of master, name of vessel, registration of license number.
2) Names of people on board.
3) Dates, times and places of departure and arrival.
4) Periodic positions on passage or search.
5) Major or pertinent sightings.
6) Major or pertinent events.
7) Periodic weather and sea conditions.
8) Master's signature.

Radio Log

Should record no less than:

1) License and call sign (if applicable to vessel type)
2) Name of certified operator.
3) Periods of listening.
4) A summary of all communications exchanged with other stations.
5) A summary of all communications transmitted, received or intercepted relating to distress, urgency, and safety traffic.
6) Reference to important service incidents.

Logs pertaining to inquiries shall be retained until all action resulting from such incidents is concluded or until it is evident they shall not be required.

Clarity of Logs

Logs should be maintained in a manner suitable to be read in court for inquiries or inquests. Test read periodically at a later date. If incomplete or confusing try to improve the style of future entries. Inaccuracies in a log may be considered serious negligence. Deliberate falsification of a log may result in imprisonment. Any changes or corrections in a log may only be scored with a single line and must be initialed.

RESPONSIBILITY TO MAINTAIN A SEAWORTHY VESSEL

The owner or master or both may be held personally responsible in law to maintain a seaworthy vessel and may be personally fined for the failure to do so.

a) The broad definition of seaworthiness encompasses proper manning, soundness of design, construction, stability and state of repair, equipment to be not less than required by CSA, sufficient fuel and victuals, safe trim and draught.

b) Thus, a vessel with insufficient approved pyrotechnic distress signals, or insufficient PFD's onboard may be deemed to be un-seaworthy.

RESPONSIBILITY TO MAINTAIN THE TRAINING LEVEL OF THE CREW

As noted above the master (coxswain) is responsible for the proper manning of the vessel. This can translate into a responsibility for adequate training levels among the crew.

LIABILITIES OF A VESSEL MASTER

To people

Preservation of life at sea is paramount. The master is personally liable for the conduct of people onboard the vessel. For example, if a crew member or guest onboard the vessel becomes intoxicated and in consequence falls overboard and is drowned, the master may be found liable for the death for:

1) permitting the individual to become intoxicated and,

2) for not confining the person to the safety of a cabin.

A) In a rescue situation, the master is required to make his "best endeavour to fulfill the rescue attempt commensurate with his training and experience". Thus, a professional seafarer will be expected to exhibit greater skill and success than a casual recreational boater.

B) The British courts have traditionally been sympathetic to pleasure boaters who have made sincere efforts to provide rescue assistance but in the process, have failed or further accident or injury has occurred.

C) It may be anticipated that the burden of liability in a rescue will rest more heavily upon an Auxiliarist than upon a pleasure boater, but be less than that of a professional seaman.

To Property

Rescuers are not obliged to extend themselves to rescue property if danger to life is not involved. However, if they do attempt to rescue property, the same expectation of degree of skill and success will apply as in the case of saving life, i.e. higher for the skilled than the unskilled.

a) It is not difficult to damage a vessel when endeavouring to assist her. Even when afloat and safely under tow, if the towed vessel were to unexpectedly sink in a narrow channel, the rescuer may be held liable to remove the obstruction. This can apply even though the rescuer may be exonerated from the cause of the sinking and free from any liability for the loss of the tow.

b) The rescuer should refrain from directly engaging in rigging shores or plugging holes on board the distressed vessel lest he later be accused of causing needless damage to hull or fittings through acting over zealously. It is more prudent to stand by to rescue the vessel's personnel if the distressed vessel's crew are unsuccessful in their damage control efforts.

WAIVER OF CLAIMS

To protect the master, crew and owner or organization from liability for damages resulting from alleged negligence of the rescuers, the master should first obtain a suitable "waiver of claims" undertaking from the vessel being offered assistance. The waiver may be made in the vessel's log, on a waiver form or over the VHF radio and witnessed by a CGRS. it should be remembered that a waiver is no excuse for negligence.

Note

It would be inappropriate to obtain a waiver before saving the life of a person in grave and imminent danger.

HOLD HARMLESS AND WAIVER OF CLAIMS

I,_____Master of the vessel _____

request the CANADIAN COAST GUARD AUXILIARY (CGA) to render assistance by towing or other acts. In consideration for which I, for myself and the owners, and all persons on board, and our heirs and executors, HEREBY AGREE TO HOLD HARMLESS AND WAIVE ALL CLAIMS against the CGA, the CGA vessel, her owners, her master and crew, Her Majesty the Queen, Her Servants and Agents, for personal injury, death or property damage, resulting or arising (either directly or indirectly) from the endeavor to assist, or any abandonment or transfer of the assistance or tow.

Dated this _____day of _____ 19____

Signed_____
MASTER OF VESSEL DESIRING ASSISTANCE

Signed _____
WITNESS

VERBAL WAIVER OF CLAIMS AND INDEMNIFICATION

(To be used when hailing by radio)

EXAMPLE -

DO YOU WANT US TO TOW YOU? IF WE AGREE TO DO SO, WILL YOU HOLD US HARMLESS AND WAIVE ALL CLAIMS FOR ANY DEATH
INJURY OR DAMAGE WHICH MAY RESULT?

(Print and place on board the SRU to be available to read to a prospective tow.)

Note:

- Log questions and replies.
- Have entry signed by witnesses to exchange.
- Ask the CGRS to tape and witness exchange.

The waiver may be obtained by the following methods:

1. By signature of distressed master on standard waiver form.
2. Verbally by VHF (channel 16 may be used if it is a distress) after requesting Coast Guard Radio Station to monitor the exchange.

OR

3. Verbally, by hailing, after ensuring rescue crew members are listening and prepared to later attest to the wording.

Log the exchange of verbal communication, both question and reply, then have crew members sign the log book entry as to accuracy. If there is no log book, write same on a loose sheet of paper, then have the crew witness this by signature.

If answers are negative, do not attempt to tow, but stand by and call JRCC for instructions.

LIABILITY INSURANCE

It is frequently asked if a rescuer can be sued even when a waiver has been obtained. The answer is that one can be sued at any time and virtually without cause. The real question is whether or not the suit will succeed.

The correct use of a waiver will greatly minimize the possibility of a successful suit. However, litigation is costly even if successfully defended and the possibility of being found liable is always present; even if remote.

TOWING POLICY

SAR units may provide towing assistance in accordance with the National SAR Objective, provided it can be done without imperiling the assisting vessel or tow or persons on board.

If in the judgment of the JRCC / MRSC or the Commanding Officer On-Scene, the conditions for a distress or potential distress are not present, and if suitable commercial assistance is readily available, then the provision of tow by the SAR unit will be denied.

ENFORCEMENT AND THE LAW

- Law enforcement **is not** a function of the Auxiliary.
- A citizen may enforce the law by "laying an information'.
- An Auxiliary member who "lays an information" does so as a citizen, not as an Auxiliarist.
    - Auxiliary craft could be tasked to transport a peace officer or other officials under the “humanitarian” designation.

Media Guidelines

CANADIAN COAST GUARD AUXILIARY MEDIA GUIDELINES FOR MEMBERS

This organization you are involved with may very well end up dealing with the news media at some time. All members must be aware of their responsibility to the C.C.G.A., the Canadian Coast Guard, the National SAR System and the image you represent. The following points are a guide when approached by the media with respect to different situations.

COAST GUARD AUXILIARY PROMOTION IN GENERAL

Remember who you represent. Always conduct yourself in a professional and responsible manner.

A. Find out exactly what they want to know.

B. Ask what their deadline is.

C. Go over the questions with the interviewer if possible.

D. Keep your answers brief and to the point.

E. If you do not know the answer, say so and offer to get the information or direct them to the person who has it.

F. Remember that you are a member of the C.C.G.A. and make that clear. Any questions about the Coast Guard or any other department would be directed to the proper spokesperson.

G. Be very careful of interview traps, such as “Off the record”. **NEVER** give “off the record” or “just between you and me” responses.

WHEN NOT SURE OF WHAT TO SAY, GIVE THE FOLLOWING RESPONSE:

"Sorry, I can't answer your questions. However, for information regarding this situation, please contact _____". No other comment should be necessary. If they persist, simply repeat the response politely, firmly and say "Good-bye!"

SAR RELATED EVENTS

According to the National SAR manual "**Personnel participating in or questioned regarding a SAR operation shall not make public releases or grant public interviews without first obtaining clearance to do so from the JRCC**". Once clearance is obtained, it is often more prudent to respond to these requests rather than give the impression of being unaware or unresponsive. The facts given in the interview should be limited to:

A. Number of resources engaged in the search;

B. Number of crew aboard the search unit;

C. Number of hours the unit has been engaged in the search;

D. The area searched, and search results of the individual's vessel;

E. Weather conditions;

F. Search unit's capabilities, and

G. Item of general interest, readiness to carry on with the search, etc.

Some things that you should stay away from include: personal opinions in general and specifically on the conduct of the case; departmental policy; the cause of the incident, or guesses as to what may have happened. Let other officials release names of people and/or vessels involved and medical condition or damage to vessel. Be careful. They often try to get you to confirm something that they suspect. Just defer to JRCC.

JRCC PRESS LINE 613-392-8854

Under no circumstance should crew members grant the press interviews.

WRECKS

The CGA has no entitlement to salvage. However, Search and Rescue operations may on occasion lead to involvement with wrecks. With the possibility of being the only representative or authority at the scene of a wreck, the Auxiliary coxswain should have some understanding of the regulations relating to wrecks and the procedures to follow.

In most instances, it will be sufficient for the Auxiliarist to notify JRCC of the situation and log the event for possible future evidence in court.

There is no right to salvage on the Great Lakes.

Function of Receiver of Wrecks:

The Receiver of Wrecks takes charge of all wrecks to preserve the wreck and the lives of shipwrecked persons. The Receiver may take charge in person or may receive the wreck from another person. Wreck may include the cargo of vessels or aircraft.

a) Whenever any person takes possession of a wreck in Canadian waters he shall deliver it to the Receiver as soon as possible. However, the Minister may dispense with requiring physical delivery. The Receiver shall advertise a description in the Custom House nearest to the wreck and, elsewhere within 48 hours of taking possession.

b) If the wreck is not claimed within I year, the Receiver will sell it to defray fees and costs of salvage.

c) If the wreck is claimed within I year, the Receiver will release it to the owner upon receiving payment of fees and costs of salvage.

Identity of Receiver

The Receiver of Wrecks is an agent of the Department of Fisheries and Oceans. In the Central and Arctic Region the Receiver is an employee of the Canadian Coast Guard (Navigable Waters Protection Branch). In the absence of a duly appointed Receiver, a Chief Officer of Customs or various other Federal Government representatives, including a lighthouse keeper, may perform the function for the Receiver.

In addition to the prescribed list of people who may act in their stead, the Receiver may order any person to act for them.

Authority and Power of a Receiver

a) Power to Assign & Commandeer

i) In the course of his duties, the Receiver may assign duties and issue directions to any person as he sees fit.

ii) The Receiver may give direction to vessels close at hand to assist and may commandeer vehicles and equipment he considers necessary.

iii) Fines and penalties may be laid upon those who refuse to obey.

b) Cause No Hindrance

The Receiver and those under his orders may not be obstructed, and have the right of access across property.

c) *Search Warrant*

The Receiver may obtain warrants to search for concealed salvage and may cause to be apprehended, anyone who plunders or obstructs
the preservation of a wreck.

d) Penalty

Penalty for withholding or concealing salvage is a fine plus double the
value of the wreck.

e) Not Counter to Wishes of Master

The receiver is not authorized to take charge of a ship, cargo, or materials contrary to the expressed wish of the master or owner.

Repel by Force

The master of a vessel stranded, wrecked or in distress may repel by force any person who endeavours to board without his permission.

Awards

Persons who assist the Receiver or who suffer damages as a result of the endeavour to preserve the wreck or survivors, are entitled to salvage awards.
No salvage is payable for Government services- including services of CGA.

FORMAL INVESTIGATONS:

Each Province and Territory has its own death inquiry system. This provides for the investigation of deaths which are unusual. As well, deaths may require further investigation to resolve such issues as the identity of the deceased, the medical cause of death, when the death occurred, why it came about and whether it was preventable. A coroner's inquest serves as a means for a public ascertainment of facts relating to deaths. It is a means for formally focusing community attention on and initiating community response to preventable deaths. It is also a means for satisfying the community that the circumstances surrounding the death of one of its members will not be overlooked, concealed or ignored.

The proceedings at an inquest are not accusatory and adversarial but inquisitorial. No one can properly be described as an "accused" in the proceedings. There is no final judgment. The result is a verdict containing findings of fact, sometimes recommendations for the prevention of such deaths in the future and in some cases allegations that certain individuals.
bear responsibility for the death in question.

The proceedings at an inquest are normally held in public to achieve their purposes most effectively. The findings possess great practical significance and may substantially influence public opinion, private reputation and the course of potential subsequent civil and criminal proceedings arising out of the death inquired into.

STEPS TO BE TAKEN BEFORE APPEARING AT AN INQUIRY

You should review the incident in question in your mind. Only after you have exhausted your own independent recollection of the incident should you consult your notes and the case file concerning the incident. You should make copies of your notes and the case file pertaining to the incident as they may be required at the hearing. You should ensure that the copies are accurate copies by comparing them to the originals.

You should obtain from the department legal advisers a clear idea of the procedure involved.

You should not talk to anyone concerning the incident unless you are expressly authorized to do so by departmental legal advisers.

Module 4

SAR Communications

QUICK FACTS

- *Contact JRCC by telephone*
- *VHF Simplex*
- *VHF Duplex*
- *Cellular a last resort*
- *Final contact by telephone*

Communication Procedures

The primary communication link once the vessel has left the dock is the Very High Frequency (VHF) radio. By radio, the vessel master can contact other vessels, the nearest Coast Guard Radio Station (MCTS, also known as CGRS), and through the CGRS, can contact the JRCC 1-800-267-7270 (Halifax – 1-800-565-1582) via the telephone system. All rescuers are expected to obtain their VHF operator's certificate in order to participate In the SAR communication network.

For any SAR incident, the standard VHF communications procedures are followed. This includes All Stations broadcasts, Maydays, and Mayday relays. Vessels are required to maintain a **continuous radio watch on channel 16** or any frequencies allotted by the controlling authority during a search. When communicating with any civil agencies (i.e. police services), civil communications procedures may be adopted and employed.

All communications with both the JRCC and any CGRS are recorded. These daily recordings are kept in secure storage for 30 days in the event there are any legal ramifications.

Timing

The order of events in a SAR incident are as follows:

1. JRCC is made aware of a marine distress. This could be by telephone from any source, by marine radio from a distress vessel to an MCTS, or by a radio call by another vessel.

2. JRCC gathers information on the incident and uses its authority to task vessels.

3. The vessel, or vessels, to be tasked are alerted by a variety of means including radio, telephone, pager, 911 System, or other emergency alert system.

4. If alerted by telephone, a SRU is normally given available information and a tasking (incident) number at that time.

5. If alerted by other means, vessels normally contact the JRCC by telephone for further information and a tasking authorization.

6. When ready to launch, or ready to depart, the vessel informs **JRCC** with a SITREP of their readiness and situation **through MCTS**. The MCTS may have further information and instructions **from JRCC** and will direct if the task is to go forward.

7. If a vessel is already on the water when they are alerted, they will be given instructions about the task and directed on how they are to proceed.

8. Tasked vessels proceed with the task and transmit SITREPS as necessary or as requested by **JRCC via CGRS**.

9. It is normal, **and highly recommended**, that communications with "JRCC" be conducted by VHF communications to the MCTS. The MCTS is in constant and immediate contact with JRCC and will transmit information and instructions between the SRU and the Controller at JRCC.

10. The MCTS will direct which radio channel is to be used.

11. In emergency or special circumstances, you may request CGRS to connect you directly to JRCC (a Controller) through a duplex channel.

If your vessel responds to an incident without a tasking authorization from JRCC there is no insurance coverage for vessel and crew for that response. Nor is there any reimbursement to the vessel for the task. Also, if contact is not made with JRCC your vessel will not be part of the coordinated response, one that may already be underway.

The **only** situation in which a vessel may **self-task** is when an incident is **visually apparent** and it is a matter of **life and death**. In these **rare** situations JRCC must be contacted as soon as possible.

QUICK FACTS

- **VHF Channel 82A** CCG Working Frequency
- **VHF Channel 65A** Search and Rescue Working Frequency

Communication Methods

Communications with JRCC can be done via two modes. One is by telephone (land-based and cellular) and the other is by VHF radio through the assistance of a Radio Operator at a CGRS. The **Joint Rescue Coordination Centre and Coast Guard Radio Station (Marine Communications and Traffic Services)** are all linked with dedicated telephone circuits.

Log all radio transmissions to and from your station. Also, writing down messages before you send them ensures that all of the information gets transmitted correctly. When initiating SAR communications with an MCTS, the operator will state "This is auxiliary vessel (vessel's name) with SAR priority traffic. Over."

Direct communications to JRCC can be accomplished in two ways:

1. **Verbal** communication by telephone line

2. **Duplex** (ship to shore call on a non-dedicated line)
   Occasionally the coxswain of a SRU may find it more expedient, while engaged in a SAR operation, to speak directly with a controller at JRCC. This can be accomplished using a CGRS Duplex Channel. *This process is referred to as a ship to shore duplex call.*

   A duplex channel may also be used in situations where:

   a) the SRU and the distressed vessel cannot communicate directly on a simplex channel because of distance or terrain obstructions **but both can communicate with CGRS.**

   b) a Radio Medical is required. That is, when the SRU crew are involved in a medical situation such that they require direct consultation with a doctor.

QUICK FACTS

- **SITREP** reports activities and plans during a task
- **STATUS REPORT** indicates state of readiness for SAR operations and state of availability
- **CGRS** is the focal point for communications

Use of Cellular and Satellite Phones

The use of cellular phones should be avoided whenever possible. This form of communication is acceptable when this is the only way you can contact JRCC. That is, no radio contact is possible.
On a rare occasions, a cellular phone may be the only contact with the distress vessel.
Some areas do not have VHF radio or cellular service and satellite phone service may be the only communication link available.

With the use of VHF radios, facsimile machines, e-mail and cellular/satellite telephones the movement of information becomes faster and more accurate. However, no one system ensures that all participants within a communications network will receive the information.

To ensure SAR controllers, radio station operators, commanding officers and coxswains keep each other informed, the procedure is:

1. to the greatest extent possible, all messages will be sent through the MCTS.

2. the person originating the information shall ensure that others are advised as to its nature depending upon operational relevance.

3. formatted messages shall be used.

4. for security, a briefing may be done by a coordinator on cellular phone

Formatted Messages

The SITREP

The following information should be included in SITREPS to JRCC:

1. ***To:***
2. ***From:***
3. ***Case*** **description** : (sitrep # 1 only)
4. ***Number*** of the Situation Report (i.e. first, second, eighth etc.)
5. ***Present Status*** - all case details that JRCC does not have including weather conditions;
6. ***Action Taken*** - include all search patterns and movements since departing wharf;
7. ***Future Action*** - include all items that will impact on future; include in this section any request for air support;
8. **Signature** - Coxswain / master – and DTG

EXAMPLE OF SITREP MESSAGE.

To:	*Joint Rescue Coordination Centre / Trenton*
From:	*SRU Name*
Case Description:	*30 ft. Sailboat Overdue;*
SITREP Number:	*SITREP #1*
Present Status:	*First Report should list the case details. Subsequent reports only have to list new information* *On scene weather detailing wind direction and speed, wave height and visibility. Future weather is also advisable i.e. thunderstorms approaching (or building) from NE*
Action Taken:	*This section will detail what action has been performed by the SAR vessel since the last report.*
Future Action:	*The SAR vessel master should give some indication of what future plans are for the search vessel. Requests for air support may be placed in this section.*
Signature and DTG	*Signature of Auxiliary facility Coxswain / Master. 051945*

All SITREPS should be written prior to transmission.

When on a SAR tasking SITREPS should be passed on to JRCC via the CGRS (MCTS) at regular intervals. In good search conditions, that interval would be approximately two (2) hours. JRCC may request more frequent SITREPS in more adverse conditions.

The Status Report:

This format is used when a coxswain wishes to advise JRCC that he is, for example, on board his vessel, cruising or not available for SAR etc. This report relates to the serviceability and availability of the unit.

THE STATUS REPORT FORMAT

Alpha: CCGA Vessel Name & Call sign.

Bravo: Location Date and Time Group.

Charlie: From: (Date & Time) to: (Date & Time)

Delta: Remarks and Weather

Communications Priorities

The Order of Priority of Radio Communications

1. ***Distress*** communications.
2. ***Urgency*** communications.
3. ***Safety*** **communications.**
4. Communications relative to ***direction finding*** bearings.
5. Communications relative to the navigation, movement and needs of aircraft engaged in ***search and rescue operations.***
6. Messages containing exclusively ***meteorological*** (weather) observations destined to an official meteorological office.
7. Communications related to the application of the ***United Nations*** Charter.
8. ***Service*** **messages** relative to the working of the radio communications service or to messages that have been previously transmitted.
9. ***All other*** communications.

(NOCL)

NOTICE OF CRASH / CASUALTY LOCATION MESSAGE

The purpose of this message is to advise the JRCC or Search Master of the location of an aircraft crash or marine casualty and to provide important details to enable suitable rescue decisions. The format is designed to ensure an orderly and complete transfer of information. As well, the information is coded to prevent premature release of details to the public.

The contents of a NOCL message and the format are shown below. The interpretation is on the following two (2) pages.

Sarnia CGRS, this is CCGA vessel Fancy Canoe with a NOCL message:

Alpha: Affirmative
Bravo:42258230
Charlie: 2-white; 1 Black
Delta: Alpha
Echo: Two
Foxtrot: Rescue vessel on scene.

NOTICE OF CRASH/CASUALTY LOCATION MESSAGE (NOCL)

The originator transmitted only the words on the left:
the meaning is shown on the right.

ALPHA

AFFIRMATIVE	Positive identification that the object sighted is the search object.
NEGATIVE	Unable to positively determine that the object sighted is the search object.

BRAVO — An eight or nine digit group denoting position without North or West being used.

CHARLIE

NEGATIVE	When no survivors or casualties can be seen.
ANY NUMBER	To indicate number of survivors or casualties actually seen, followed by:
UNDETERMINED	When the status of the survivor or casualties cannot be determined
RED	Immediate treatment and evacuation (Priority 1)
YELLOW	Early treatment and evacuation (Priority 2)
GREEN	Routine treatment and evacuation (Priority 3)
BLUE	Deferred treatment and evacuation (Priority 4)
WHITE	Uninjured
GREY	Missing
BLACK	DEAD

NOTE: This information on the medical conditions of victims should only be transmitted after investigation by SAR TECHs or other medically trained personnel.

DELTA

ONE	1.	side of hill plus indicate north, south, east or west slope
TWO	2.	in valley plus indicate north, south, east or west side of floor
THREE	3.	in level country
FOUR	4.	heavily wooded area (can be used in conjunction with one, two or three)
FIVE	5.	in water
	ALPHA	NEAR SHORE
	BRAVO	WELL OFF SHORE

ECHO

ONE	Request authorization to deploy the SAR TECH team.
TWO	A helicopter will be required
THREE	A ground party could reach the location in good time
FOUR	A rescue boat will be required

FOXTROT Remarks

Briefly provide any detail which will allow JRCC/SM to initiate appropriate action, bearing in mind that **the transmission is not secure.**

Blue Flashing Light

In January 2003, Rule 45 of the Collision Regulations was amended to allow Canadian Coast Guard Auxiliary vessels to exhibit the blue flashing light while engaged in SAR activities.
This will improve on-scene communications and coordination between rescue vessels, aircraft and the distressed vessel.

CCGA members should be aware that use of the blue light does not relieve them of their obligations under the Collision Regulations.

When in doubt
call
JRCC

QUICK FACTS

INFORMATION TO OBTAIN FROM CALLERS

- name and telephone number of caller
- name and address of vessel owner/operator
- number of people onboard - adult, children
- proposed route, destination and estimated time of arrival
- vessel name and license or registration number
- size, type (sail or power, make) and age
- colour of hull, deck, cabin, and sail- if applicable
- types of engines
- distinguishing features, i.e. antennas, radar
- radios and channels monitored - VHF, CB
- safety equipment aboard - i.e. flares (number and type)
- lifejackets or PFD's (number and type)
- does the vessel have a dinghy - rigid or inflatable
- known medical problems
- experience of operator
- point of departure and time

Coast Guard Auxiliary Coxswains occasionally receive calls from concerned parties regarding a possible vessel in distress or overdue. With this in mind, the information on this page is provided as reference. Ultimately, JRCC should be contacted and a tasking obtained.

Obtaining Information

The most important information a person can get from the general public is a telephone number where the caller can be reached and the caller's name. The caller should be advised to call JRCC. With the caller's name and number JRCC can track down the source of the information.

The list above is a guide to obtaining information from a caller requesting assistance. Not all of the information will be available or needed in every case but the receiver should attempt to obtain as much information as possible on the first contact.

QUICK FACTS

DEGREES OF URGENCY

- ***UNCERTAINTY***
- ***ALERT***
- ***DISTRESS***

Degrees of Urgency

An ***Uncertainty*** phase exists when there is doubt regarding the safety of a ship or other craft or persons on board, and when:

- she has been reported overdue at destination; or
- she has failed to make an expected position or safety report.

An ***Alert*** phase exists when there is apprehension regarding the safety of the ship or other craft or the persons on board and when following the uncertainty phase, attempts to establish contact with the ship or other craft have failed and inquiries addressed to other appropriate sources have been unsuccessful; or information has been received indicating that the operational efficiency of a ship or other craft is impaired but not to the extent that a distress situation is likely.

A ***Distress*** phase exists when

a) positive information has been received that a ship or other craft or a person on board is in grave and imminent danger and in need of immediate assistance;

***b*)** following the alert phase, further unsuccessful attempts to establish contact with the ship or other craft and more widespread unsuccessful inquiries point to the probability that the ship or other craft is in distress;

c) information is received which indicates that the operating efficiency of the ship or other craft has been impaired to the extent that a distress situation is likely.

*** 16**

When used on a cellular phone will connect the caller directly to an MCTS station.

The following procedures are for vessels requiring assistance that are not in distress and are in no immediate danger.

MARB

JRCC TRENTON PROCEDURES FOR VESSELS REQUIRING ASSISTANCE IN NON-DISTRESS SITUATIONS

*When a SAR/CGA unit / base becomes aware of a vessel requiring assistance that **is not equipped with a VHF radio**, the unit / base shall call the JRCC via landline or pass information through the Coast Guard radio station. The JRCC will determine and task the most suitable resource to assist the vessel.*

*When a SAR/CGA unit / base becomes aware of a vessel requiring assistance that **is VHF radio equipped**, the unit / base shall advise JRCC via land line and direct the vessel to contact the nearest Coast Guard radio station on channel 16. The unit / base should monitor the situation and assist the vessel in obtaining communications with the radio station.*

*The CGRS will contact the JRCC with all particulars about the vessel. The JRCC will (if the vessel is in no immediate danger) issue a Marine Assistance Request Broadcast (MARB) alerting all private and commercial vessels in the area of the vessel requiring assistance. Following the broadcast there is a waiting period (not to exceed **fifteen (15) minutes**) for vessels of opportunity or commercial operators to offer assistance to the vessel.*

***Following the waiting period** and if no suitable answer to the MARB is received, the JRCC will task the most suitable resource to assist the vessel.*

The SAR unit tasked to assist the vessel shall assist as deemed necessary. Should this assistance involve towing the vessel, the vessel shall be towed to the nearest safe haven.

SAR/CGA units should not self task to these non-distress situations. Vessels responding to a non-distress situation prior to JRCC determining the requirement for and the issuing of a MARB do so as vessels of opportunity.

Incident numbers will only be issued by the JRCC to SAR/CGA units that are tasked by the JRCC to respond to an incident or responding to a distress. Vessels responding to non-distress situations without being tasked will not be given an incident number.

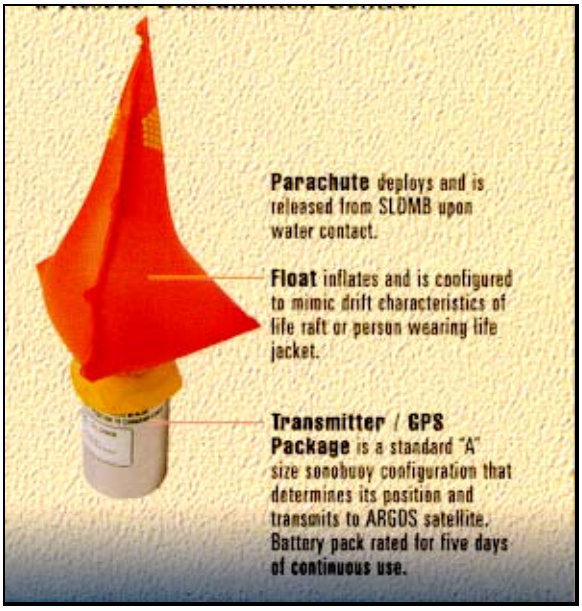
SAR / CGA units upon hearing a MARB are encouraged to advise JRCC of their availability for tasking.

Self-Locating Datum Marker Buoy

The Self-Locating Datum Marker Buoy (SLDMB ™) is a search and rescue instrument that periodically transmits its location once deployed in fresh or salt water. It has the capability of emulating the drift characteristics of either a person in the water (PIW) with survival suit, or a four-person life raft with drogue. The emulation mode is selected at the time of deployment.

The SLDMB is one component of a complete search and rescue system, which consists of the following:

- Air-deployable, configurable surface buoy (see figure 2)
- Satellite monitoring service
- Local satellite receiving station (a local user terminal, or LUT)
- Rescue Coordination Center or JRCC.



EPIRB AND GPIRB

The EPIRB emergency beacons operating on 406 MHz rely on Doppler shift in the distress signal as the Cospas-Sarsat satellite approach and recede in overhead orbits.
The accuracy depends upon the number of signal bursts received by the polar orbiting satellites. The positioning is most accurate when a satellite passes directly overhead.
The satellites orbit at about 600 miles above the earth, in polar orbit. Each satellite provides an east-west view of about 3000 miles, with an orbit time of 105 minutes. The satellites pass over the poles at about 20-minute intervals, but at the equator, two to three hours may elapse between passes.

To improve coverage in equatorial waters, a second network of satellites has been installed (GEOSAR). They are in geostationary orbit and provide coverage from 70^0 N to 70^0 S.

Unlike orbital satellites, geostationary satellites do not give a position when receiving an EPIRB's signal, but do provide knowledge that the beacon has been activated. The owner's registration code is also provided.

A 406 Mhz. GPIRB will provide the position of the distress. (Fig.5)

Some of the problems with existing EPIRB's:

a) Failure of new owners to register transfers when a vessel is purchased.
b) Multiple passes often required to obtain accurate position.
c) Long time interval locating accidental activation.

A new Position Indicating Radio Beacon, known as the GPIRB has been developed. These are self-locating beacons using GPS satellites. Their operation is illustrated in Figure 4.

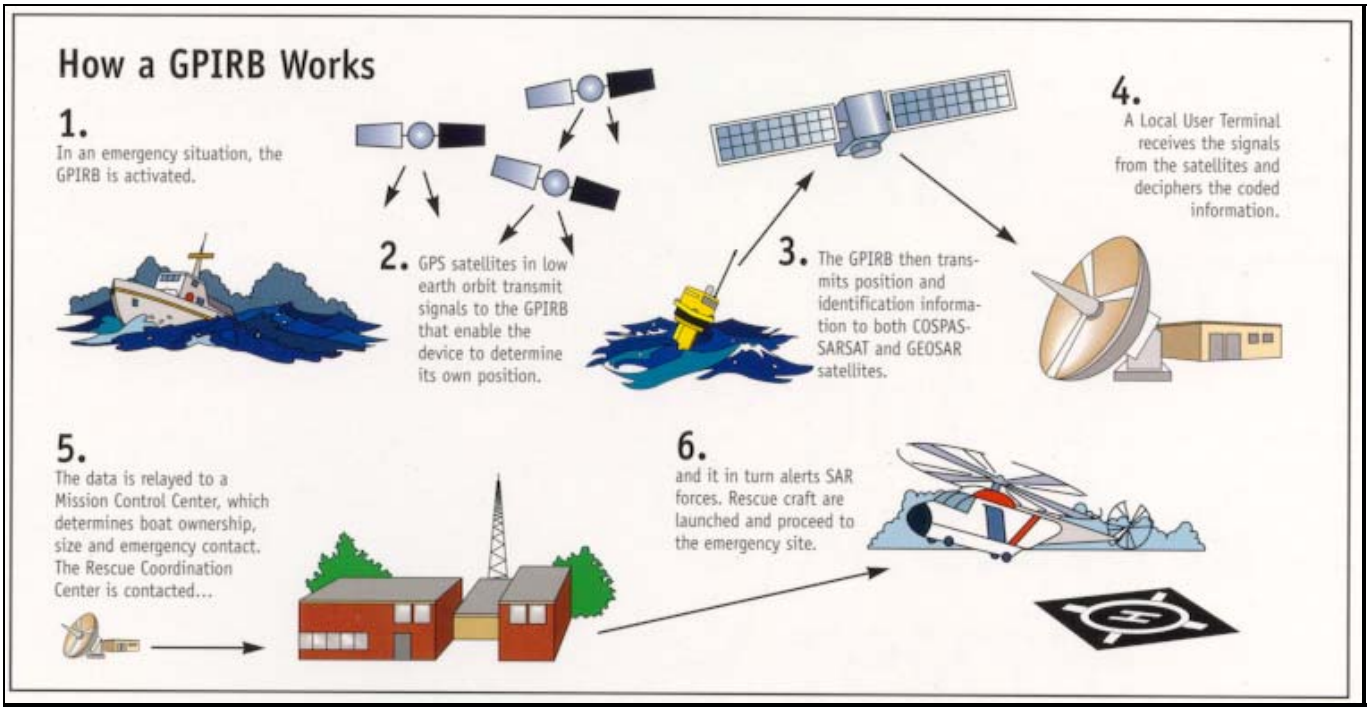


Figure 4
(Drawing by Northern Airborne Technology)

Northern Airborne Technologies GPIRB

Global Maritime Distress and Safety System (GMDSS)

What is *GMDSS*?

GMDSS is a new international system using improved terrestrial and satellite technology and shipboard radio systems. It ensures rapid alerting of shore-based rescue and communications authorities in the event of an emergency. In addition, the system alerts vessels in the immediate vicinity and provides improved means of locating survivors.

GMDSS was developed through the IMO and represents a significant change in the way maritime safety communications are conducted. While it is mandatory for all ships subject to the International Convention for the Safety Of Life At Sea (SOLAS) (**cargo ships 300 gross tons or greater and all passenger vessels, on international voyages),** GMDSS will impact on all radio-equipped vessels, regardless of size. As of February 1, 1999. All SOLAS ships fully comply with GMDSS requirements.

Why GMDSS?

GMDSS was developed to save lives by modernizing and enhancing the current radio communications system. By using satellite and digital selective calling technology. GMDSS provides a more effective distress alerting system. It improves the current system by:

- Increasing the probability that an alert is transmitted when a vessel is in distress;
- Increasing the likelihood that the alert will be received;
- Increasing the ability to locate survivors;
- Improving rescue communications and co-ordination; and
- providing mariners with vital maritime safety information.

GMDSS Equipment

A) Digital Selective Calling *(DSC)*

Marine radios have been enhanced with the addition of a feature known as DSC. This modification allows vessels to automatically maintain the required watch on distress and calling channels (CH. 70 on VHF for example) instead of the current aural listening watch. A DSC receiver will respond to the vessel's unique Maritime Mobile Service Identity number (MMSI #), similar to a telephone number, or to an "All Ships" DSC call within range. Once contact has been made by DSC, additional communications then move to a working channel.

Although MCTS stations are not yet equipped with DSC, SAR resources may have DSC capable radios. In such instances, *automated distress calls* may be received on channel 70. Units should attempt contact on Ch. 16, relay the distress if necessary, and make sure the shore station is made aware of the distress. Ship stations should not acknowledge a DSC Distress Alert via DSC unless requested to do so by a Coast Station.

B) Satellite Communications

The INMARSAT satellite network provides global communications, except for the Polar Regions. In areas without any VHF or MF DSC shore facilities, INMARSAT A, B or C terminals are used for distress alerting and communications between ships and shore. INMARSAT provides an efficient means of routing distress alerts to SAR authorities.

C) Emergency Position Indicating Radio Beacon. (*EPIRB)*

See comments in earlier section of this module.

D) L - Band EPIRB's operate with the INMARSAT system which locates their position and alerts an JRCC.

E) Search and Rescue Transponder *(SART)*

A SART is a portable radar transponder used to help locate survivors of distressed vessels that have sent a distress alert. They are detected by radar and transmit in response to received radar signals. The radar-equipped vessel will see a series of dots on the screen indicating the position of the SART. In the event that a vessel must be abandoned, a SART should be taken on board survival craft.

Maritime Safety Information

Maritime Safety Information broadcasts, which comprise distress alerts, SAR information, navigational and weather warnings, as well as forecasts can be received in three different ways in GMDSS:

A) NAVTEX receivers are fully automatic and receive broadcasts in coastal regions up to 300 miles offshore.
B) INMARSAT-C terminals receive broadcasts for areas outside NAVTEX coverage areas.
C) HF Narrow Band Direct Printing receivers can be used as an alternate to INMARSAT.

MODULE 5

AIR RESCUE SUPPORT

HELICOPTER OPERATIONS

The above picture illustrates the process of removing an injured person from **a vessel using the stokes litter. Note SAR Techs at the stern.**

Preparing for a helo operation:

- □ Maintain VHF radio watch on ch. 16 / 82
  (Radio traffic when helicopter is overhead is difficult - a set of earphones will help).
- □ You may be asked to provide a VHF direction finding signal.
- □ Select and clear the most suitable hoist area (preferably aft).
- □ Secure all loose gear.
- □ Remove or lower obstructions such as flag staffs and antennae.

- □ Wear rain gear or floater coats. Spray from prop wash is significant and is most powerful when the aircraft is on approach to your vessel. Electronic equipment, if not totally waterproof, should be protected.

- □ The prop wash will remove your unsecured headgear.

- □ Normally, the helmsman will be asked to steer into the wind and maintain a speed of approximately 5 knots.

- □ On exercises, the pilot may wish to practice approaching your vessel " dead in the water". On smaller and medium sized vessels, expect the prop wash to push your boat some distance until the aircraft is directly overhead.

- □ **The helmsman must concentrate on steering and not watch the helicopter.**

- □ **Severe static electricity may be present on the hoist line. HANDS OFF!**

- □ **Do not assist the SAR Tech on his descent. The use of a boat hook for example, would not be appreciated!**

Helicopter Evacuation:

- A helicopter evacuation is a hazardous operation to the patient, the flight crew and the SAR vessel crew and should only be attempted in a matter of life and death.

- The need for an evacuation is based on the information provided by the SAR vessel crew. Accurate information must be provided so that an evaluation can be made concerning the need for evacuation.

- If the hoist is to take place at night, light the pickup area of your vessel as well as possible.

- Do not point searchlights at the helicopter. This avoids impeding the pilot's night vision. However, a searchlight may be used to assist the aircraft in locating your position.

- Provide accurate position, time, speed, course, weather and sea conditions.

- One or two SAR Techs may be hoisted on to your vessel to assess the condition of the patient.

The Cormorant
L.O.A. = 74' 10"
Cruising speed = 150 kts
Range = 750 NM

The Labrador

Fixed Wing Air Support

Night Illumination

Night searches are frequently enhanced with the use of illuminating flares dropped by fixed wing aircraft. The flares are launched from a few thousand feet and drop by parachute, extinguishing before reaching the ground or water. Their use provides a significant enhancement to lookout visibility.

Marine SRU's should communicate their search pattern and direction to the aircraft commander so that the illuminating flares are launched **behind** the SRU's general direction of travel. If the flare is launched ahead of the marine SRU, the lookout's night vision will be lost and search effectiveness significantly reduced, nullifying the flare's use.

Note: Illuminating flare and smoke canisters should only be handled by qualified ordinance personnel. DO NOT PICK THEM UP.

Survival Kit – Air Dropable (SKAD)

Fixed wing SAR aircraft carry survival kits, which consist of two (2) 10-person life-rafts and two (2) survival containers. These kits are referred to as SKAD kits and can be dropped either to persons in the water or to persons wishing to abandon their vessel.

The procedure is as follows:

- The aircraft will make several passes at approximately 300 to 500 feet to establish wind drift.
- It will probably drop several smoke canisters to determine wind speed and direction and to mark the target.

Depending on the rate of drift of the target, the air crew will try to lay the kit in a line upwind or downwind. The components of the SKAD are linked by 280 feet of floating poly line. The intent is to allow the target to make contact with this line so that the components may be retrieved.

The rafts inflate in the air once jettisoned from the SAR aircraft. No parachute is used.

Do not cut the line.

Note: If you are operating near a SKAD (or trying to recover survivors from one), **be extremely careful:**

- ♦
- ♦

Air Dropable Pump

In the event that a distressed vessel requires emergency pumping assistance to stay afloat, SAR aircraft can either hoist a portable pump down or drop it by parachute. They may also drop it to a SRU for transfer to as distressed vessel.

The parachute drop procedure is as follows:

- The aircraft will make several low passes dropping smoke canisters to determine wind speed and direction.
- The pump will then be dropped to windward of the target. (The aircrew will attempt to bracket the target with a 600 foot recovery line attached to the pump at one end and a drogue at the other.)

NOTE: When recovering an air dropable pump, you must be careful not to run afoul of either the parachute or the recovery line.

Do not open the canister while it is still in the water.

The pump canister is orange in colour, weighs 90 pounds and contains a 3.5 h.p. Honda pump. Also enclosed is oil for the pump, gasoline, intake and discharge hoses and instructions.

The pump can lift water to a maximum of 25 feet and will run for 2 hours on a gallon of fuel.

SAR Aircraft Communications

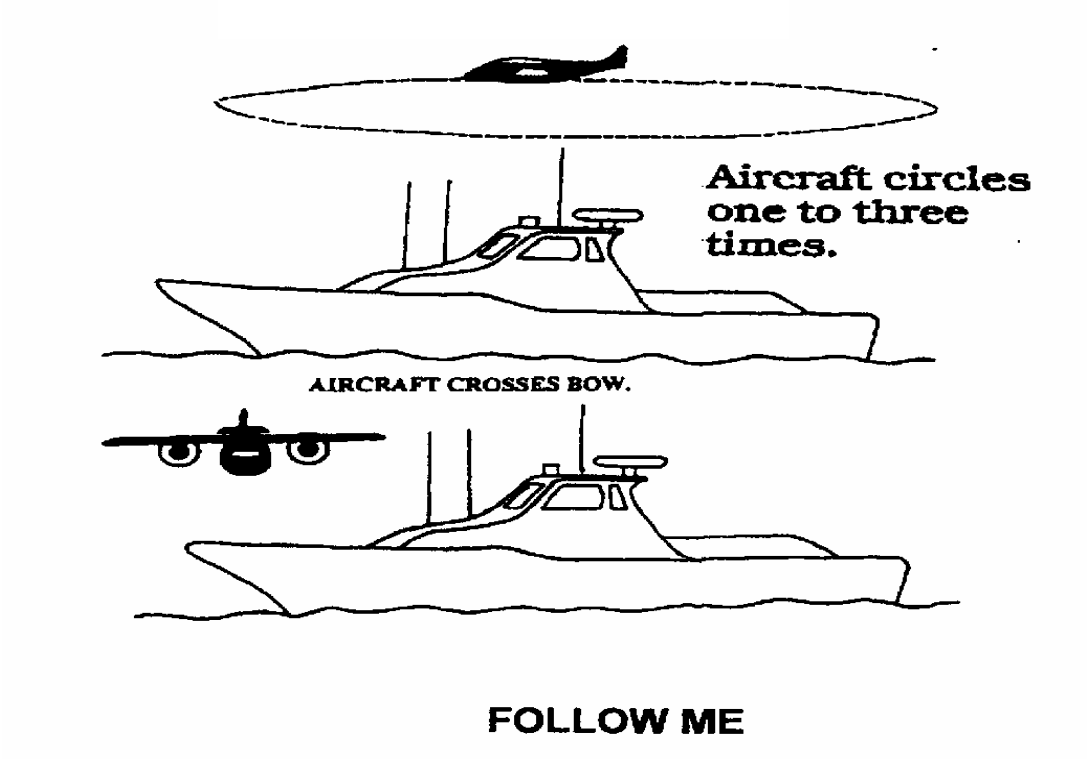
The DND aircraft that are operated by 424 squadron out of CFB Trenton are rotary wing Labrador helicopters and fixed wing Hercules aircraft. These aircraft are able to communicate on Marine VHF frequencies and usually can be hailed on channels 16 and 82A. Canadian Coast Guard aircraft can also be contacted on these channels.

As mentioned previously, CASARA aircraft may partake in a SAR response. The aircraft in this group are permitted to carry a Marine VHF but whether they do or not is left to the discretion of the unit. Vessel based crew should be familiar with the signals used by an aircraft when overhead. These will involve throttle changes and direction of aircraft as displayed below:

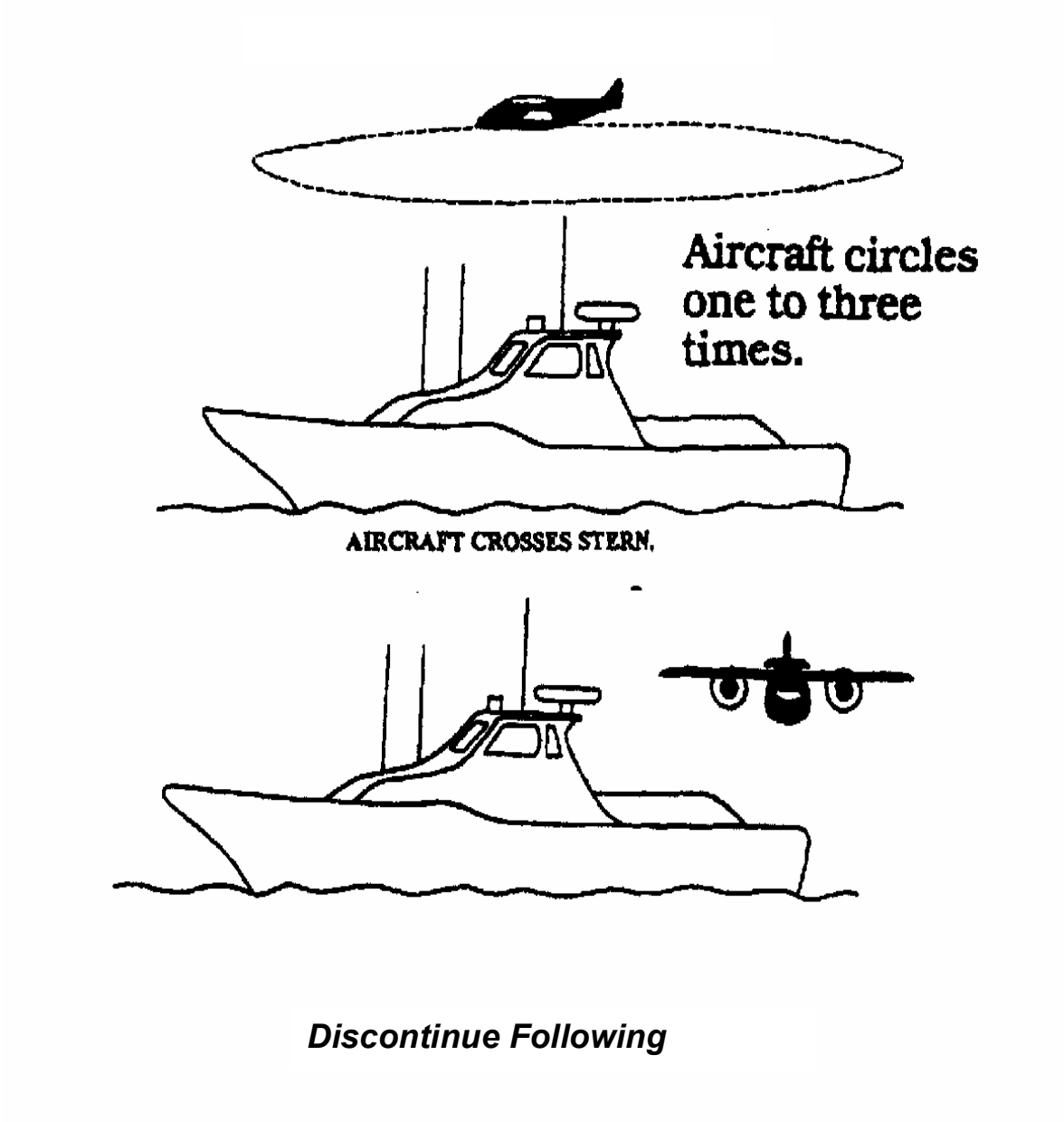
CGA members in Western Canada (Lake Winnipeg) may be working with only fixed wing C130's (Hercules) from 435 squadron in Winnipeg.

CGA units may also be involved in SAR activities with U.S. Coast Guard.

Follow Me - The aircraft will circle the rescue vessel one to three times and then cross the bow, opening and closing the throttles or changing the pitch on the propellers. The SAR vessel master should then advise the JRCC via the SAR communications line that it is following an airplane.



Discontinue Following - The aircraft will circle the rescue vessel one to three times and then cross the stern or wake of the SAR vessel opening and closing the throttles or changing the pitch on the propellers. This will indicate the aircraft no longer requires the services of the rescue craft. At this point the vessel master should contact the JRCC to ensure the situation has been terminated. In many cases, the aircraft will know the particulars of a case before the rescue vessel due to its height and radio reception.



Discontinue Following

Additional Notes

Module 6

Search Areas

Definitions

Commence Search Point: The point at which the first search track leg begins is referred to as the CSP.

Datum: Datum is the most probable location of a distress vessel or person after applying corrections to the LKP for leeway (drift due to wind) and total current for a specified period of time.

Datum Marker Buoy: A floating device launched by an SRU to indicate the drift direction of either a PIW or life raft. The device must not be anchored.

Last Known Position: An accurate Last Known Position (LKP) is the most important piece of information a search planner can have. The LKP is the last identifiable fix that can reliably be accepted for the vessel in question.

Major axis/Minor axis: Generally, a search area is rectangular in shape. The major axis is oriented through the centre, parallel to the longest side. The minor axis is also through the centre, but perpendicular to the major axis.

Track Spacing (S): Track spacing is the distance between adjacent track legs in a search pattern. The initial track spacing depends on, for instance, the characteristics of the object being searched for: PIW, type and size of vessel. As well, weather, sea conditions, crew capabilities and time of day will influence track spacing distance.

The distance (S) would normally be assigned by JRCC based on conditions in the search area.

Good Search Conditions: This condition exists when wind is less than (<) 15 knots **AND** visibility is greater than (>) 3 NM.

Poor Search Conditions: This condition exists when wind is greater than 15 knots **OR** visibility is less than 3 NM.

Responding to a Tasking

Search Planning

In many cases, the information received by JRCC suggests that a distress situation is likely but not absolutely confirmed. Overdue vessels and flare sightings are typical examples. The JRCC Controller may assign you a task to investigate and gather information.

You would be expected to proceed to the area in question and conduct a preliminary search. Just how you would conduct a search depends on your target, local information and conditions, and your knowledge of how searches are organized. It is very important for you to do a thorough initial investigation. Your report may lead JRCC to assign you a more formal search pattern, call out more resources or cancel the effort altogether.

This Module has two Parts:

PART A will cover some topics which would be useful for you to know as you investigate or "look around".

PART B will cover material which will help you understand some of the elements which go into the planning of a search by the professionals at JRCC.

PART A

When you are tasked to investigate, or when you are waiting for other resources to arrive on scene, you are your own search master. To do so effectively, you need to know about and apply some basic knowledge about the following:

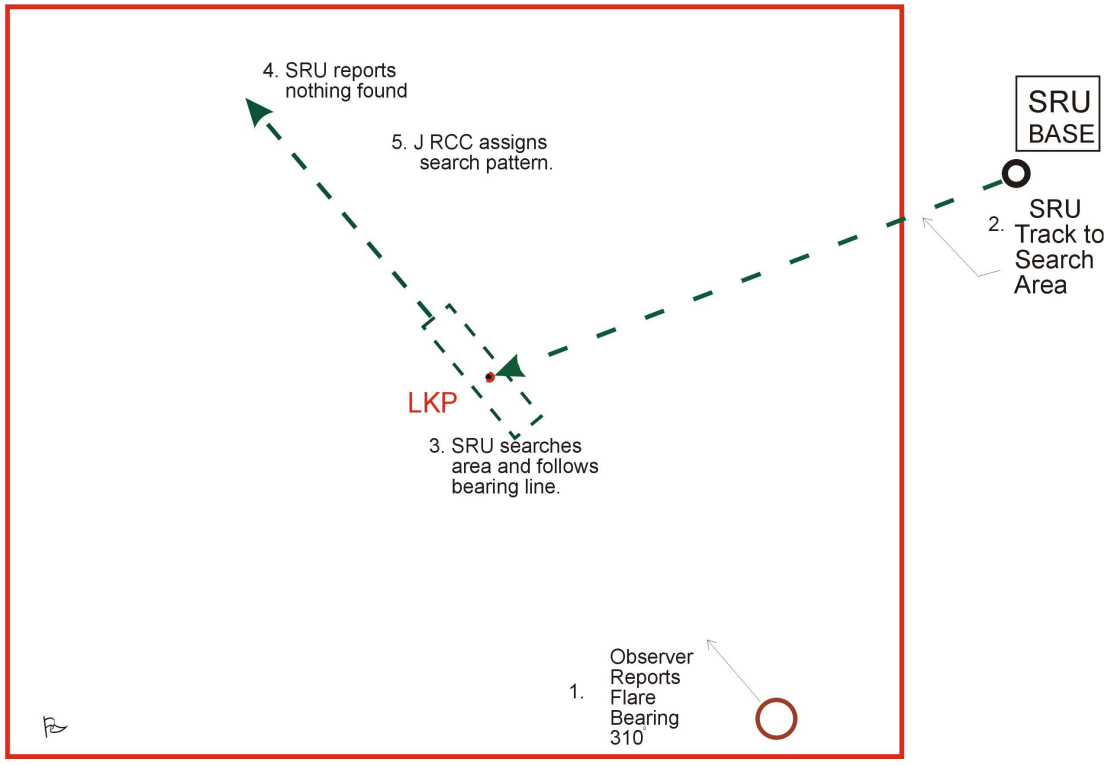
1. the type of "distress" you may be investigating
2. local knowledge
3. the effect of winds
4. the effect of currents

1. Type of distress

Give careful thought to what the distress is supposed to be. Judging the distance of lights over water is difficult. This suggests that "about a mile offshore" can be wildly inaccurate and may call for investigation over a considerable distance. Bearings, particularly from shore, are usually only approximate. An overdue vessel, if its route is known, require following a track. A vessel reported in difficulty at a location may call for an intensive search around that location. The diagram below will provide an example of how an SRU might respond to a flare sighting report.

INITIAL RESPONSE TO A TASKING

(EXAMPLE ONLY)

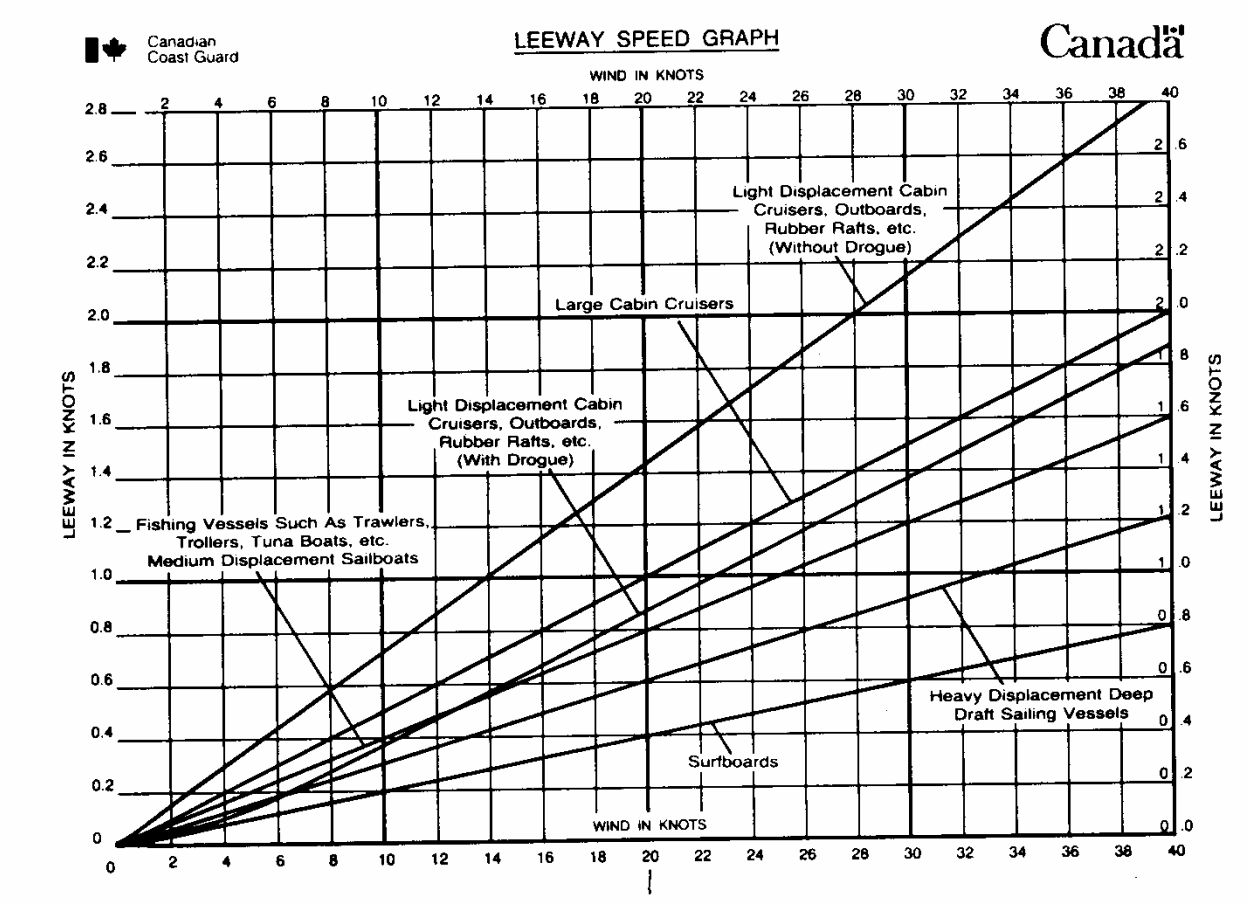


2. Local Knowledge

JRCC expects you to be their eyes and ears and have a good working knowledge of special local conditions. When you report the results of your search, JRCC should be advised that you have accounted for local currents, shoals, winds around islands, shallows and so on. Obviously, only **you** can fully know your own local conditions.

3. Winds

The drift of a vessel because of the force of the wind is called **Leeway Drift**. Obviously winds blow at different speeds and act differently on vessels of different sizes and configurations. A range of different wind speeds and vessel configurations is shown in the **Leeway Speed Graph** below. From the type of vessel and the wind speed we can calculate the Leeway Drift.



To use the graph, identify the type of craft (e.g.surfboard) and then determine the wind speed in knots (e.g. 20 KTS). The intersection of the sloping Type of Craft line, with the vertical Wind Speed line, gives a reading of 0.4 on the Leeway in Knots scale on the edges of the graph. This example would mean that the vessel's Leeway Drift is 0.4 KTS. In 3 hours, the vessel would drift 1.2 NM.

But Leeway Drift is useless unless we know where the target started to drift from **(a) location,** how long it has drifted **(b) time,** and the direction of the drift **(c) direction**.

(a) Location The most important piece of information is location. Without a known location, there is little anyone can do about a suspected "distress". In most cases, the best we can do is not an exact location but an **LKP.**
The Last Known Position (LKP) is the last identifiable fix that can reliably be accepted for the vessel or target.

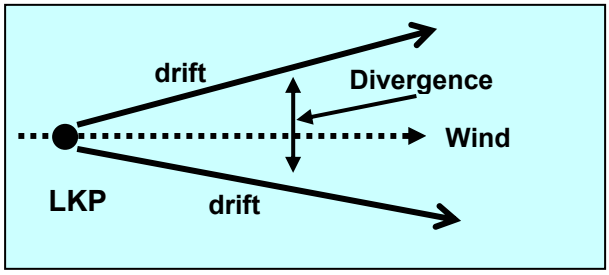
(b) Time The second most important element in our planning is time. If we know when a distress occurred, we can make judgments about victim exposure, break up of a vessel, how far wind or current pushed it and so on. Of course, to locate a vessel we need to know how long it has been drifting. In other words, **"From the**

time of the latest LKP, to the arrival of the SRU on scene, how much time will elapse? The answer to this question is called **Drift Time Interval**.

This diagram shows how to calculate Drift Time Interval. Note that **ETA (estimated time of arrival)** is in clock hours, not elapsed time. The longer the Drift Time Interval, the more the target may move from LKP.

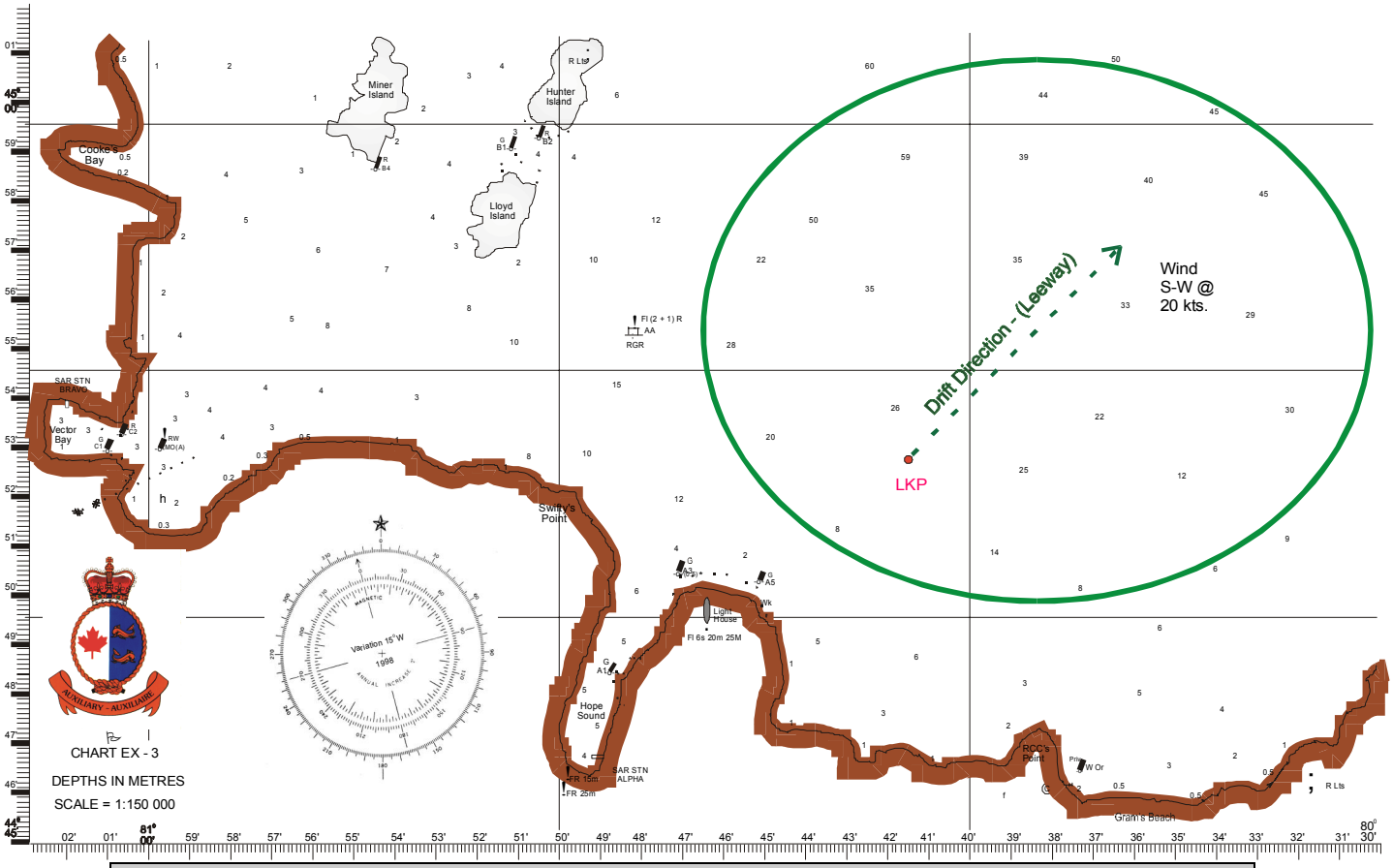
1. Time of the latest **LKP**
   E.G. 0730 hr
2. Time of the SRU's **ETA**
   E.G. 1045
3. Difference is **Drift Time Interval**
   E.G. 1045 – 0730 = 3Hr.15Min

(c) Direction If we know wind speed and direction, we can plot Leeway Drift on a chart (See Chartlet # 1, below). However, vessels do not usually drift exactly with wind direction. Depending on a host of factors (wind speed, hull configuration, superstructure, canvas sun shades, furled sails, etc.) the vessel may wander off the course of the wind. This is called **divergence** and the amount of divergence will vary even amongst vessels of the same type. In some cases the total divergence may be 45º.



Be aware that some vessels do not only wander from side to side but may follow either the right or left arms of the divergence. Long Drift Time Intervals can move drifting vessels far away from the wind direction.

Leeway



Leeway Drift of a **light displacement cabin cruiser** when wind is at 20 knots.
(Developed from the Leeway Speed Graph)

The above illustration is an example of how the Leeway Speed Graph would be used to develop a line of drift for a specific vessel type at a given wind speed.

The direction of drift is the *reciprocal* of the wind direction.

In two (2) hours this vessel would drift approximately 3 miles. In four (4) hours the vessel would drift 6 miles. As you can see from the graph, the rate of drift **(leeway)** varies considerably, depending on wind velocity and the type of vessel.

It is unlikely that there would be a need for you to calculate leeway. This task is normally a function performed by a coordinator at JRCC. However, **you should retain a basic understanding of the process.**

3. Current - Although some official information about water currents is available, the most accurate information may be your local knowledge. There are some important facts to keep in mind about water currents.

1. Unlike winds which can move different objects at different rates of speed, water currents will move all objects in the current at the same rate of speed.
2. Water currents may be strong enough to move vessels against the wind.
3. In some cases, a strong wind blowing for several hours may create a surface current strong enough to affect floating objects.
4. And finally,

You name a CURRENT for where it goes	You name a WIND from where it blows

Total Effects of Wind and Current - It is often confusing to visualize the result of a vessel's drift when the winds blow one way and the current flows another. However, once you understand the **process** of finding total drift you will be able to focus your initial search more exactly.

Plotting Leeway or Current on a Chart

a. Mark the latest **LKP**
b. Use the **rate of drift** from the Leeway Graph or known Current Speed **times Drift Time Interval** to calculate the **distance** of the leeway or current drift.
c. Plot a line on the chart **from** the CSP in the **direction** of the Leeway or Current drift (use the compass rose)
d. Use dividers and the chart Latitude Scale to mark off the **correct length of the drift line** you plotted on the chart.

Having plotted either Leeway or Current first, you then plot the second vector from the **end** of the first line plotted. The three chartlet / diagrams illustrate this process and also illustrate the **total drift** of the vessel.

You may not have the information or a stable platform to do this kind of plotting. However, if you understand the basic process of how these **vector diagrams** are constructed, your search efforts may be more successful.

Water Current

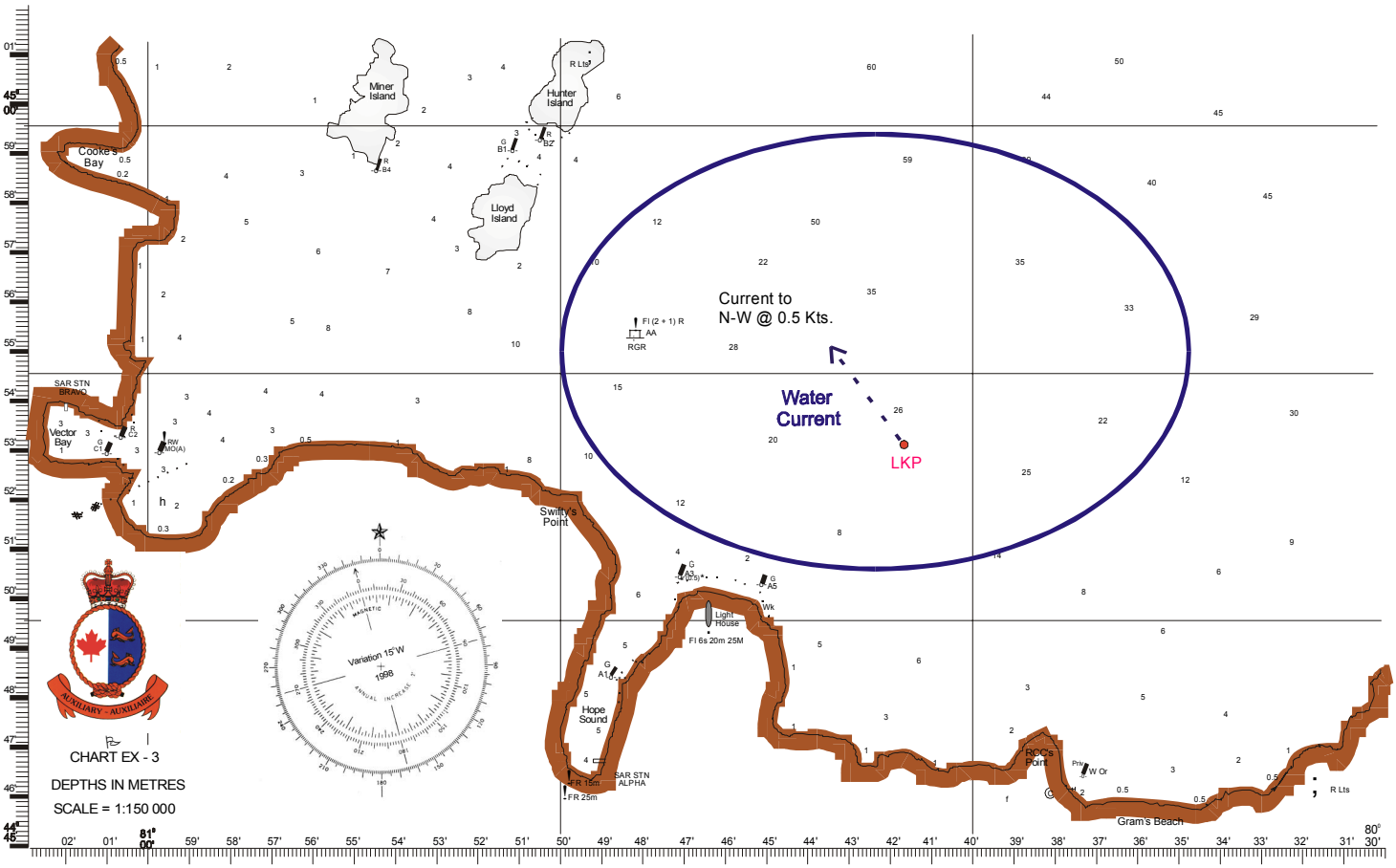


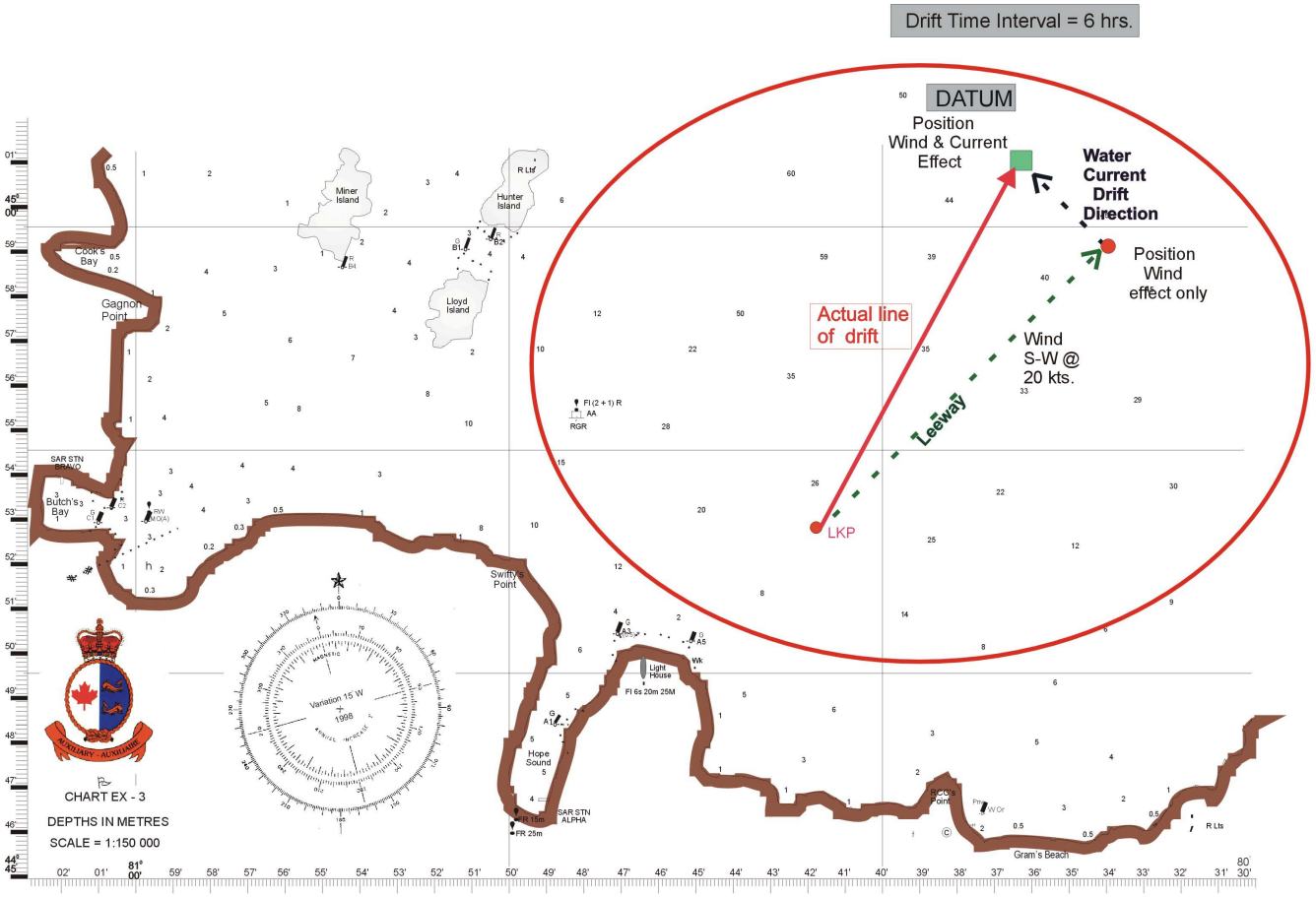
Illustration 4

As mentioned earlier, natural water currents within the Great Lakes do exist. These currents have been plotted to some extent for Lakes Ontario and Erie. However, very little data exists for the Upper Lakes.

The coxswain of a SRU should be aware of the possible existence of local currents. The experienced vessel operator will no doubt recall occasions when his vessel has drifted considerable distances when there was no wind.
Significant current can develop in some areas as a result of the approach of a weather system containing high winds. South Eastern Georgian Bay and the North Channel are typical examples. In extreme cases, vessels have been known to drift toward a wind direction as a result of water currents.

In the example shown above, you will see that the effects of current are usually less than the wind effect illustrated on the previous page (leeway).

Combined Effects of ***Leeway*** ***and Water Current***



The above drawing illustrates one possible combination of the effects of wind and current on a vessel adrift. In most applications, a computer at JRCC would be programmed to determine Datum.

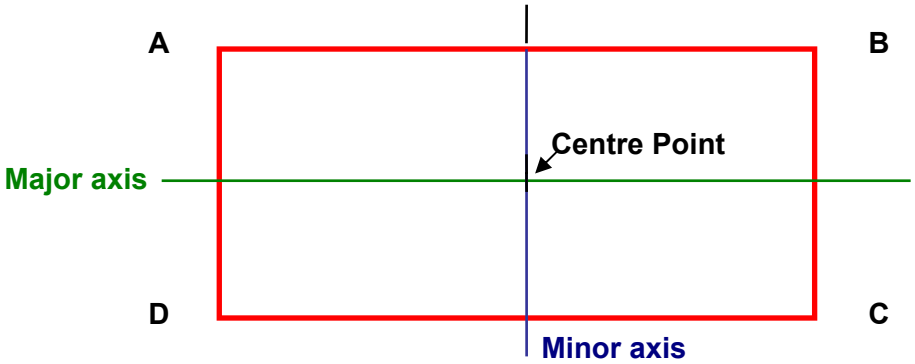
The drawing however, points out that an object adrift may not move in a direction that is exactly the reciprocal of the wind direction.

Among other factors, water current may influence the direction of drift.
As well, the direction of drift may be affected by the vessel's superstructure, in effect, acting as a sail. This effect, especially in higher winds, can significantly alter the direction of drift. The term ***divergence*** is used to identify the range of drift direction. Divergence can be as high as $\pm$ 22.5^0.

Now that we have DATUM, the *SEARCH AREA* must be identified.

Defining the Search Area

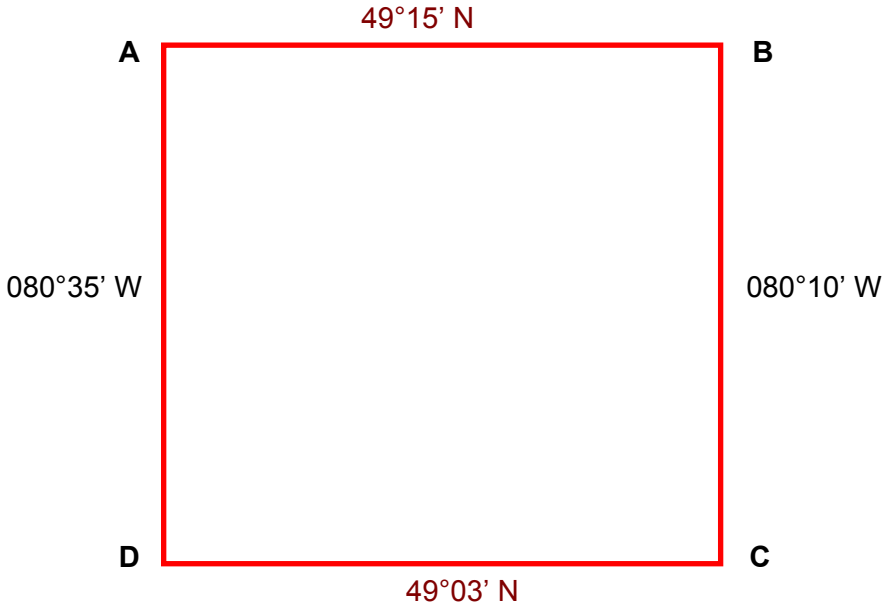
Centre Point Method: Through the centre of the rectangle lengthwise is an imaginary line known as the Major Axis. A second imaginary line through the centre at right angles is called the Minor Axis. The point at which these lines cross is called the Centre Point.



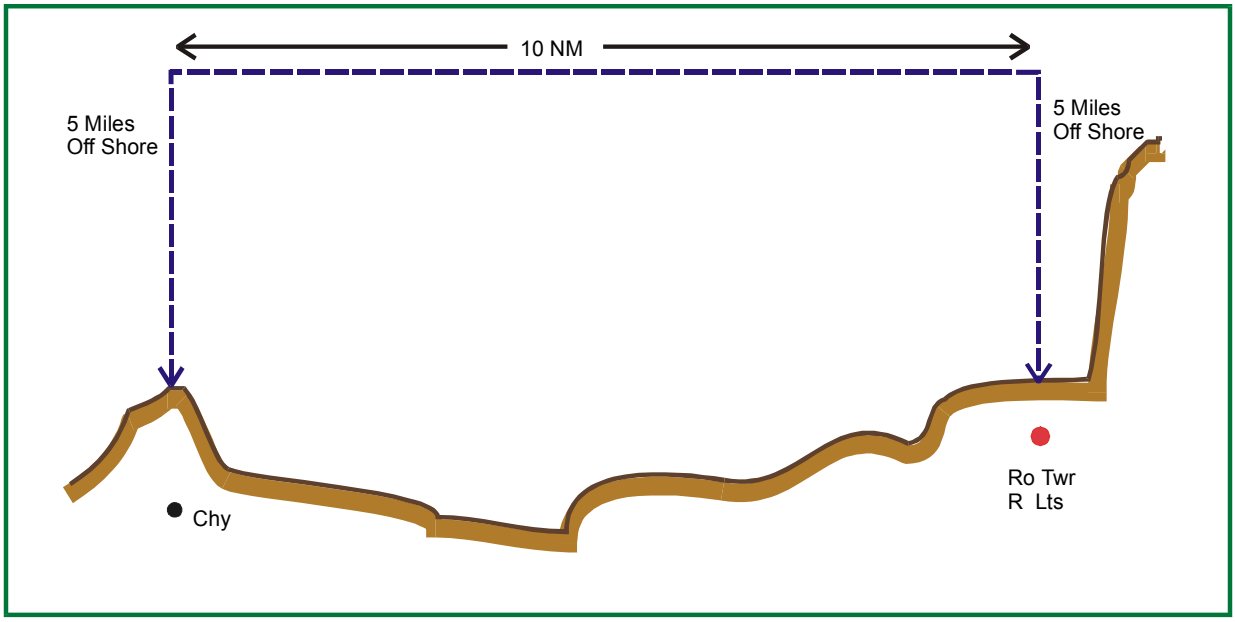
The latitude and longitude of the centre point is given along with the lengths and orientation (N – S – NW etc. or compass degrees) of the axes will describe the search area. This method is very convenient as it can describe all but irregular search areas and is very short to transmit.

Corner Point Method: In this method the ***latitude and longitude*** are given for each corner of the search area. When giving the corner points always start ***with the Northwest*** corner or the ***most Northerly*** corner and label the other corners in a clockwise direction.

Boundary Method: For this method the sides of the search area are oriented North / South and East/ West such that the latitudes and longitudes constitute the boundaries.



Landmark Boundary Method: For this method two or more landmarks are given as boundaries of the search area along a shoreline. The example below uses two landmarks to define the length of the area. In addition a distance offshore is also given to define the third boundary of the search area.



Additional Notes

Module 7

Search Patterns

In many SAR incidents, the search phase of the operation is much longer than the actual rescue phase. A systematic approach to searching is necessary to ensure the area is uniformly searched and to calculate probable search effectiveness. Selecting the most appropriate Search Pattern will also save time, effort, fuel and money. There are seven basic patterns which are used by Search Units worldwide. Three patterns are based on rectangular Search Areas. Other patterns have unique shapes. The Barrier Search is not an International search pattern.

In general, patterns ought to be selected which require fewer turns and longer ***search legs***, reducing turning errors and making navigation easier and more accurate.

Weather and lighting factors will affect the search. Often, the conditions in the search area are not accurately known until the search unit arrives on scene. The SRU will be well advised to have an alternate pattern in mind so that time is not wasted while the search unit waits for new instructions.

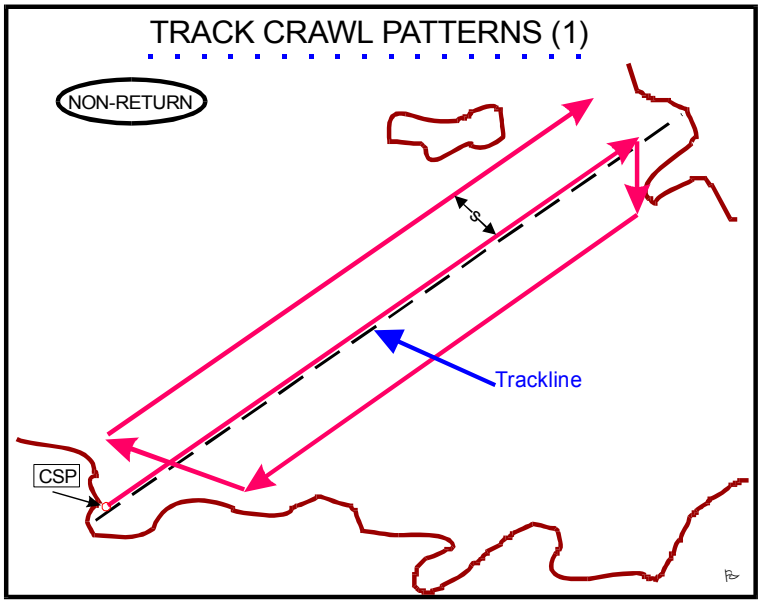
The International Maritime Organization (IMO) recognizes a number of search patterns as standards accepted by all signatory countries. These include:

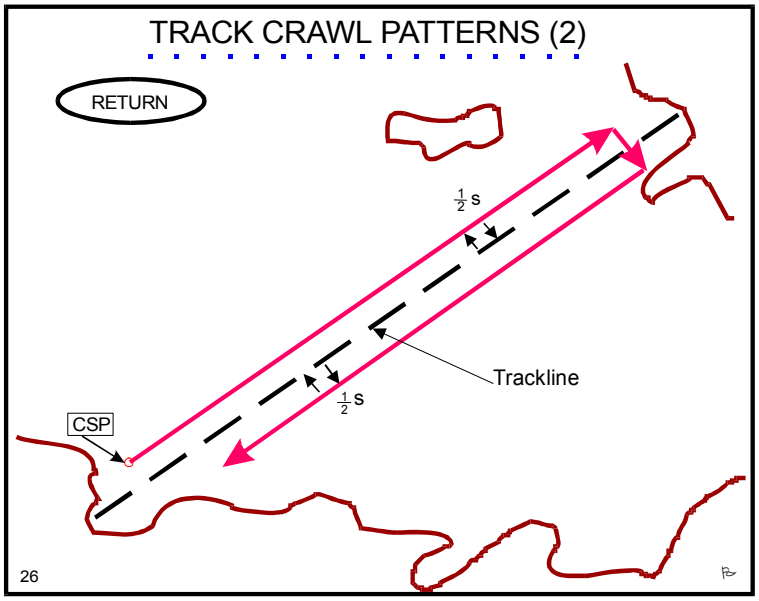
1) **Track Crawl**
2) **Expanding Square**
3) **Creeping Line**
4) **Parallel Pattern**
5) **Sector Search**
6) **Shore Line Search**
   (Equivalent to the Air Contour Search)
7) **Coordinated Pattern**

Track Crawl Patterns:

Track Line/Crawl patterns are used when the intended route of the search object is known. A route search is usually the first search action.

This pattern is usually employed as the initial search action, and is based on the assumption that the search object will be close to its intended track, or that there will be survivors capable of signaling when they hear or see the search unit. Some common track crawl patterns are shown. Track crawl patterns can be used on electronic or visual searches.

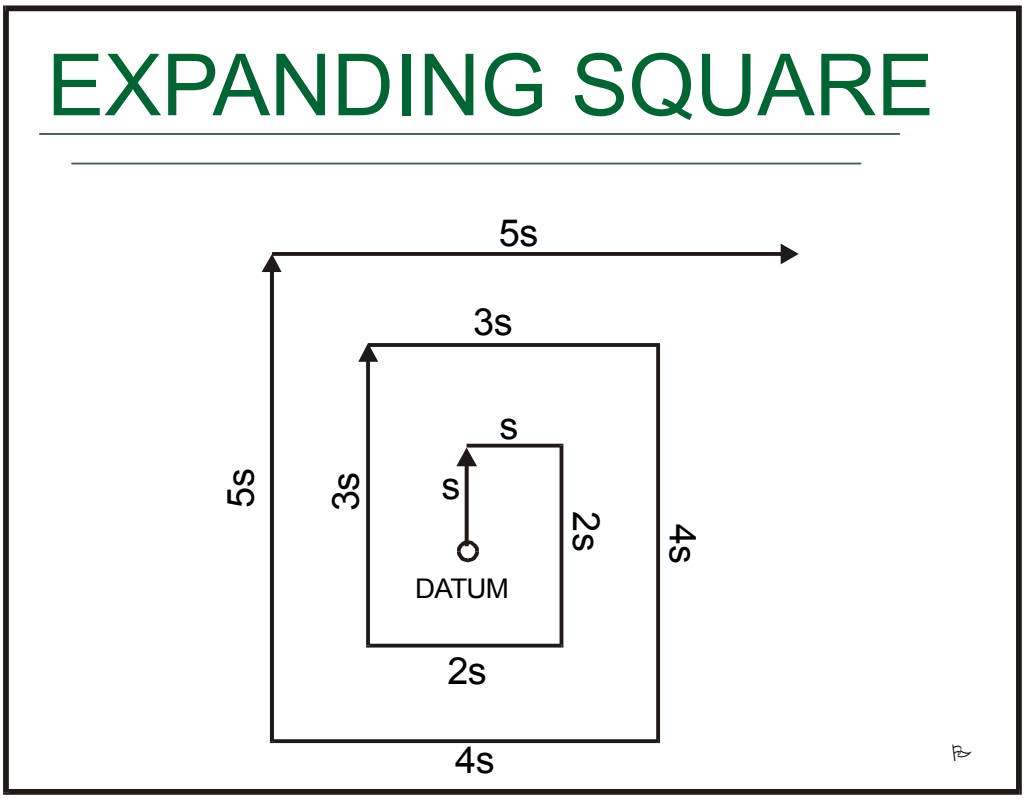




Expanding Square Pattern:

Square patterns are used to search a small area when little doubt exists about the distress position. They provide a more uniform coverage than a sector search and may be expanded. Square searches are referred to as ***expanding square searches*** beginning at datum and expanding outward.

In the expanding square, the CSP is at datum.



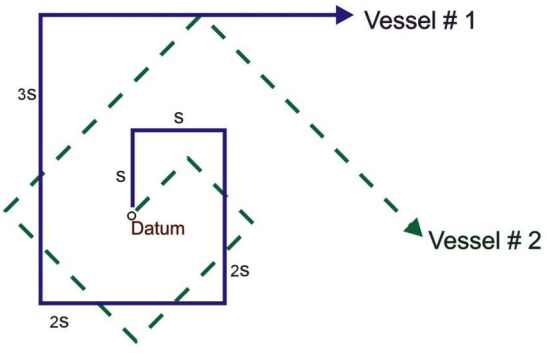
This pattern is considered to be a ***fair weather*** pattern because it ***searches equally in all directions from datum***. It is also ***inadvisable to use this pattern where islands or land forms*** would interrupt the pattern. When possible, it is advisable for the pattern to be laid off using the cardinal points of the compass, i.e. North, South, East and West, for ease of steering and simplicity of calculation. The first Track Leg would be 1x S --where S = Track Spacing--as would the second Leg after the vessel has turned 90 degrees to Starboard. If the Track Spacing was 3, the first Leg would be 1 x 3 or 3 nautical miles and the second leg would also be 1 x 3 NM = 3 NM. The third Leg would be 2 x 3 NM = 6 NM. The formula would be followed for all the other legs.

The number of legs and the time to complete an Expanding Square pattern will depend upon:

1) The search speed of the SRU
2) The track spacing (S)
3) The size of the search area. (see table on next page)

EXPANDING SQUARE SEARCH PATTERN

MULTI - VESSEL



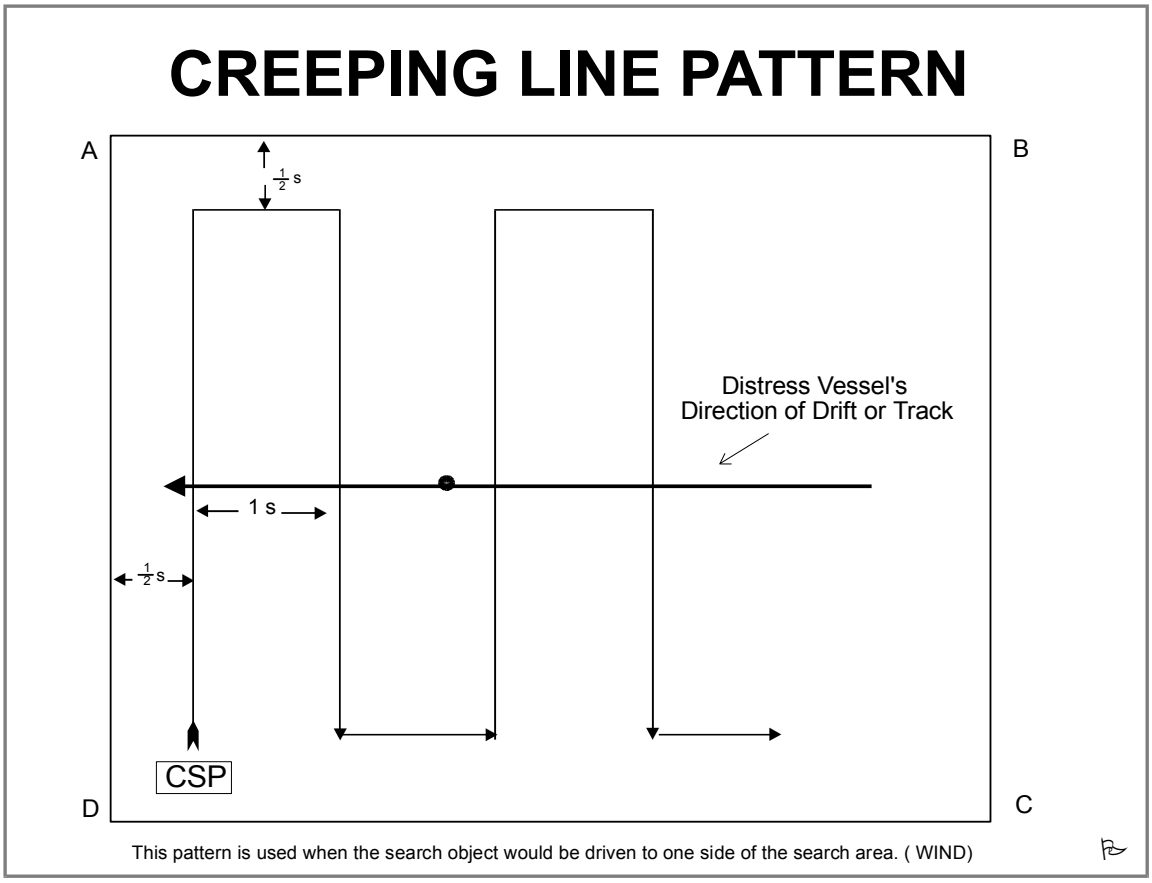
Used when the location of the search object is known with reasonable accuracy.

TRACK SPACING	SEARCH VESSEL SPEED								
	1 kt.	2 kts.	4 kts.	6 kts.	8 kts.	10 kts.	12 kts.	14 kts.	16 kts.
0.5	30 :00	15 : 00	07 :00	05 : 00	03 : 45	03 : 00	02 : 30	02 : 09	01 : 52
1.0	60 : 00	30 : 00	15 : 00	10 : 00	07 : 30	06 : 00	05 : 00	04 : 17	03 : 45
1.5	90 : 00	45 : 00	22 : 30	15 : 00	11 : 45	09 : 00	07 : 30	06 : 26	05 : 38
2.0		60 : 00	30 : 00	20 : 00	15 : 00	12 : 00	10 : 00	08 : 34	07 : 30
2.5		75 : 00	37 : 00	25 : 00	18 : 45	15 : 00	12 : 30	10 : 43	09 : 22
3.0		90 : 00	45 : 00	30 : 00	22 : 30	18 : 00	15 : 00	12 : 51	11 : 15
3.5			52 : 30	35 : 00	26 : 15	21 : 00	17 : 30	15 : 00	13 : 08
4.0			60 : 00	40 : 00	30 : 00	24 : 00	20 : 00	17 : 09	15 : 00
4.5			67 : 30	45 : 00	33 : 45	27 : 00	22 : 30	19 : 17	16 : 52
5.0			75 : 00	50 : 00	37 : 30	30 : 00	25 : 00	21 : 26	18 : 45
5.5			82 : 30	55 : 00	41 : 15	33 : 00	27 : 00	23 : 34	20 : 38
6.0			90 : 00	60 : 00	45 : 00	36 : 00	30 : 00	25 : 43	22 : 30
6.5				65 : 00	48 : 45	39 : 00	32 : 00	27 : 51	24 : 22
7.0				70 : 00	52 : 30	42 : 00	35 : 00	30 : 00	26 : 15
7.5				75 : 00	56 : 15	45 : 00	37 : 00	32 : 09	28 : 08
8.0				80 : 00	60 : 00	48 : 00	40 : 00	34 : 17	30 : 00

Expanding Square Computation Table

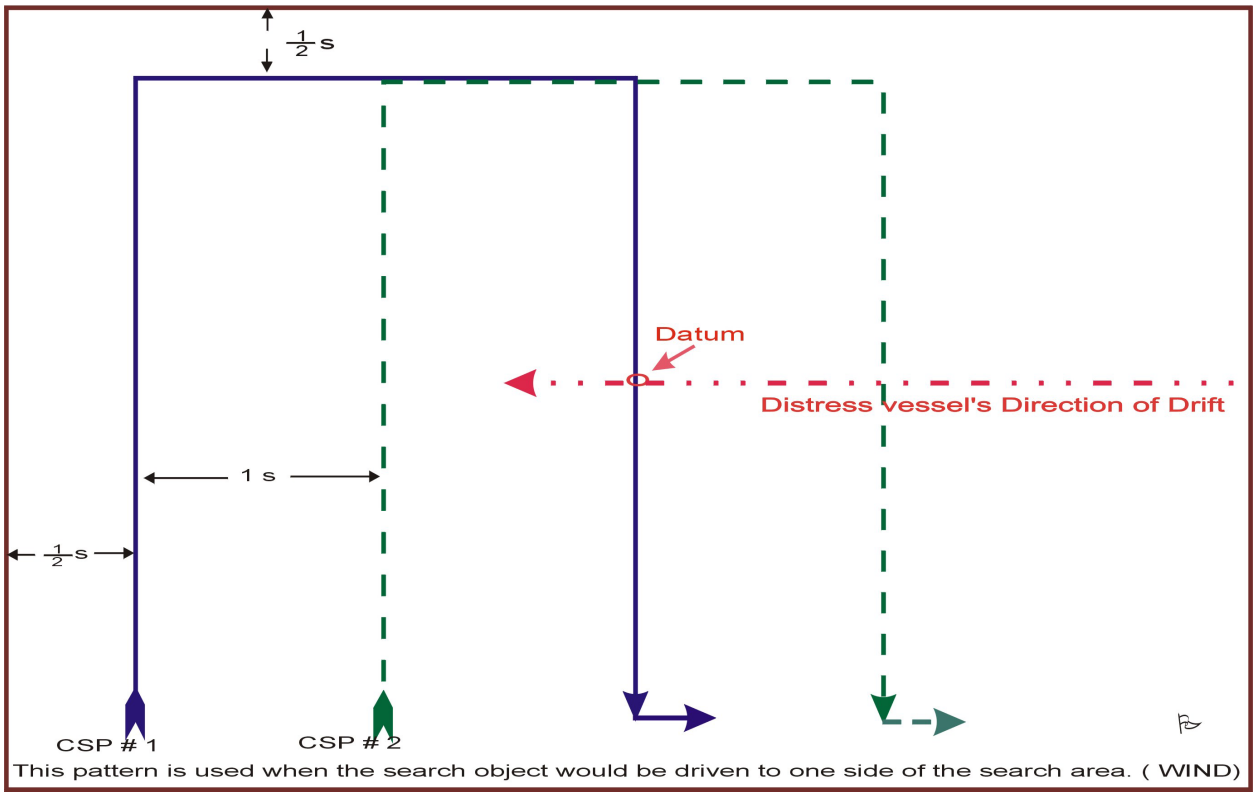
Creeping Line Search Pattern:

There are two types of patterns which require successive search legs advancing across a search area. These are Creeping Line and Parallel Search Patterns. Both are employed to provide uniform coverage over areas where only the approximate position of the target can be estimated. Such patterns are called Creeping Line when the legs are parallel to the shorter side of the search area.



Creeping Line Patterns are more suitable with track legs perpendicular to the drift line of the distress vessel when there is strong effects of wind or current.

CREEPING LINE PATTERN
MULTI - VESSEL SEARCH

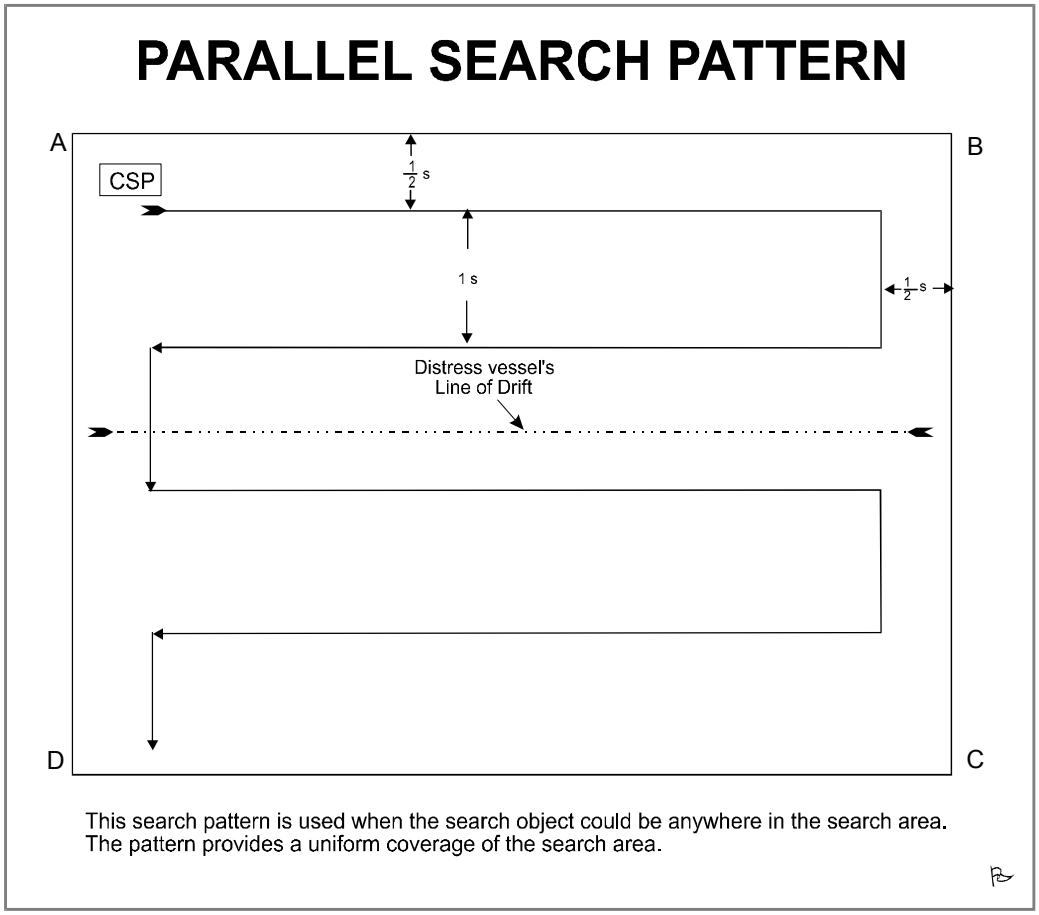


This pattern is used when the search object would be driven to one side of the search area. (WIND)

Parallel Search Pattern:

Differs from a Creeping Line in that the legs are parallel to the longest side of the search area.

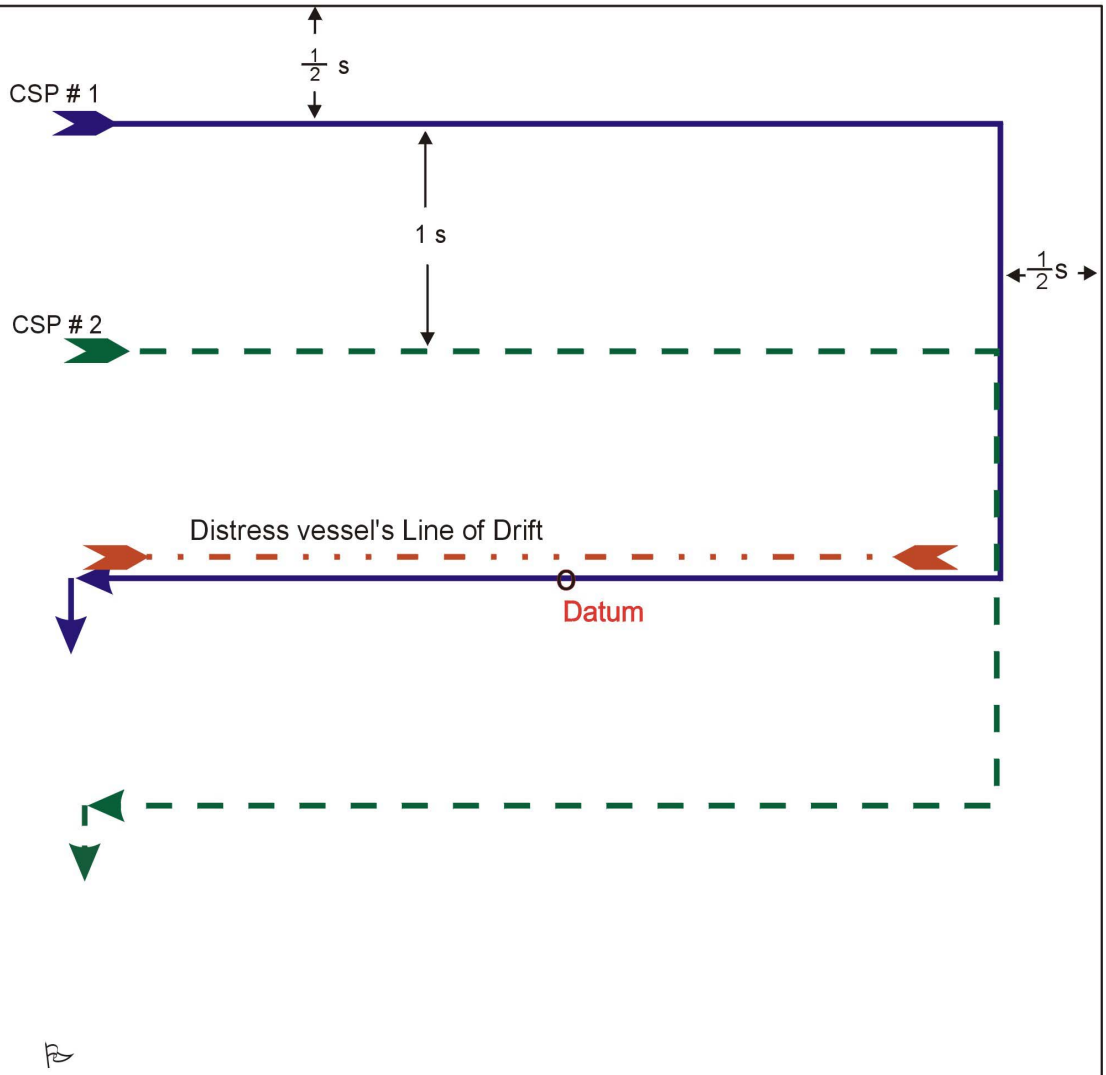
SINGLE UNIT PARALLEL SEARCH PATTERN



Parallel Search Patterns are more suitable for large areas since there are fewer turns and navigation is normally more accurate.

Parallel Search Patterns are usually used when there is little wind or current influence on the distressed vessel.

PARALLEL SEARCH PATTERN
MULTI - VESSEL

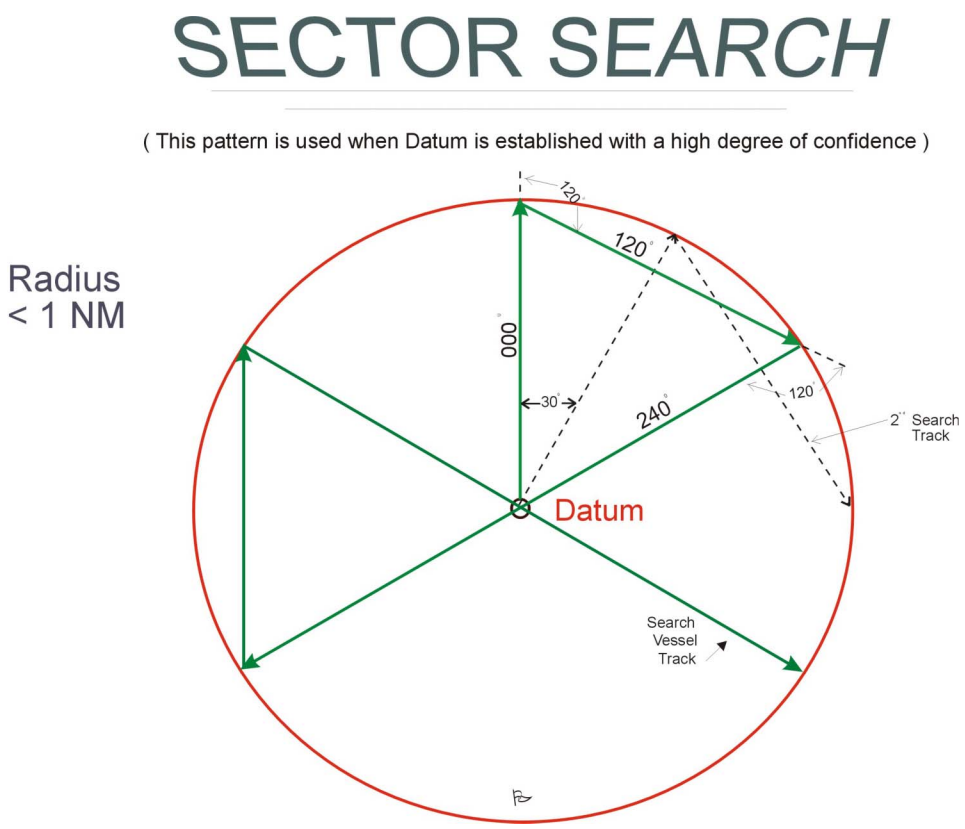


This search pattern is used when the search object could be anywhere in the search area.

Sector Search Pattern:

A Sector Search Pattern is used when the position of a distress is reliable or the area searched is not extensive and a concentration of effort is required at datum. A Sector Search requires an **accurate Datum**. The position should be marked with a **floating datum marker** which will serve as the search vessel's centre point reference. The floating datum marker is **not to be anchored** but allowed to drift at the same rate as anything else caught in the same current.

The Sector Search begins with a Track Leg proceeding in a **cardinal direction.** The length of the Track Leg will depend entirely on the accuracy of the Datum. If the Datum is very accurate, a Track Leg of ¼ to ½ NM would be sufficient. As the accuracy of the Datum diminishes, the length of the Track Leg would increase. At the end of the first Track Leg, the search vessel turns 120 degrees to Starboard and executes a Track Leg of the same length as the first. This will continue until the Sector Search has been completed. If the search does not have a positive conclusion, the search vessel should begin the second Sector Search 30 degrees to Starboard of the first Track Leg performed.
The radius used in a Sector Search should not exceed 5 NM. ***In practice, a radius of 1 or 2 NM is most common.***



SECTOR SEARCH COMPUTATION TABLE

(Times listed in minutes & seconds)

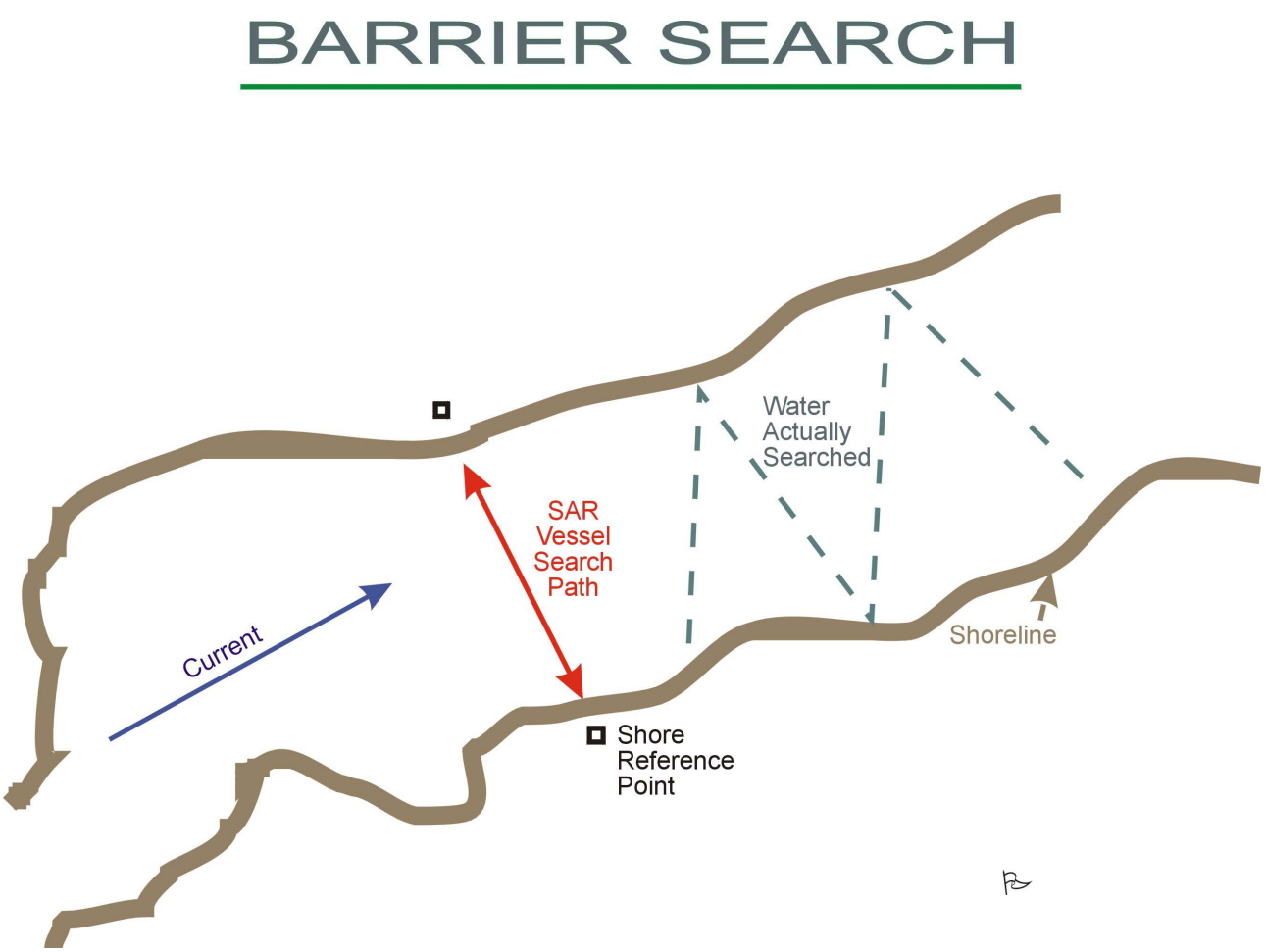
Radius in miles	Vessel speed in knots						
	3 kts.	5 kts.	8 kts.	10 kts.	12 kts.	15 kts.	18 kts.
0.5	10 : 00	06 : 00	03 : 45	03 : 00	02 : 30	02 : 00	01 : 40
1.0	20 : 00	12 : 00	07 : 30	06 : 00	05 : 00	04 : 00	03 : 20
1.5	30 : 00	18 : 00	11 : 15	09 : 00	07 : 30	06 : 00	05 : 00
2.0	40 : 00	24 : 00	15 : 00	12 : 00	10 : 00	08 : 00	06 : 40
2.5	50 : 00	30 : 00	18 : 45	15 : 00	12 : 30	10 : 00	08 : 20
3.0	60 : 00	36 : 00	22 : 30	18 : 00	15 : 00	12 : 00	10 : 00
3.5		42 : 00	26 : 30	21 : 00	17 : 30	14 : 00	11 : 40
4.0		48 : 00	30 : 00	24 : 00	20 : 00	16 : 00	13 : 20
4.5		54 : 00	33 : 45	27 : 00	22 : 30	18 : 00	15 : 00
5.0		60 : 00	37 :30	30 : 00	25 : 00	20 : 00	16 : 40

Barrier Search

The Barrier Search is used in areas where there is a persistent strong current. The search area lies perpendicular to the path of the current. The search unit travels back and forth over the same path across the current. The path along which the search craft travels is termed the 'barrier'.

As the vessel searches, the current moves the water through the barrier along which the search craft is moving. The unique thing about this search pattern is that the area moves past the search craft rather than the boat moving through the area. The track length is constant being the width of the search area. Track spacing is not a consideration because the craft is maintaining a constant track over the bottom.

Should the distance between the two shore reference points be greater than 0.5 miles and the search object is small, then two or more vessels should be used.

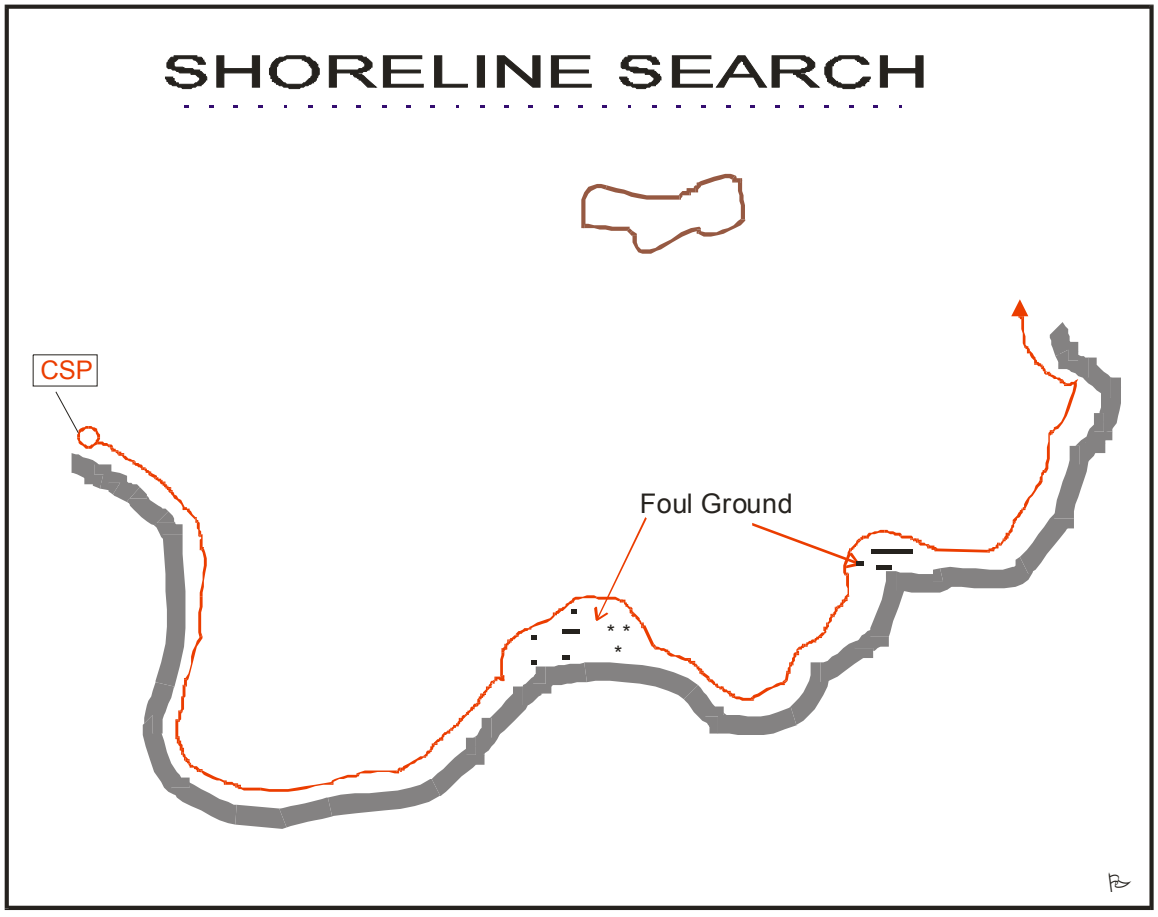


The Shoreline Search:

Is sometimes referred to as a Shore Crawl, is frequently used when a Search and Rescue unit is assigned to look for survivors of a maritime incident or a vessel which may have drifted ashore.

The coxswain and crew must maintain an awareness of water depths in general, and in particular, the nature of the sea floor. For example, a continuous sandy bottom is far less hazardous than one which is strewn with boulders.

Shore crawls at night require added attention because of the difficulties determining and maintaining off shore distances.

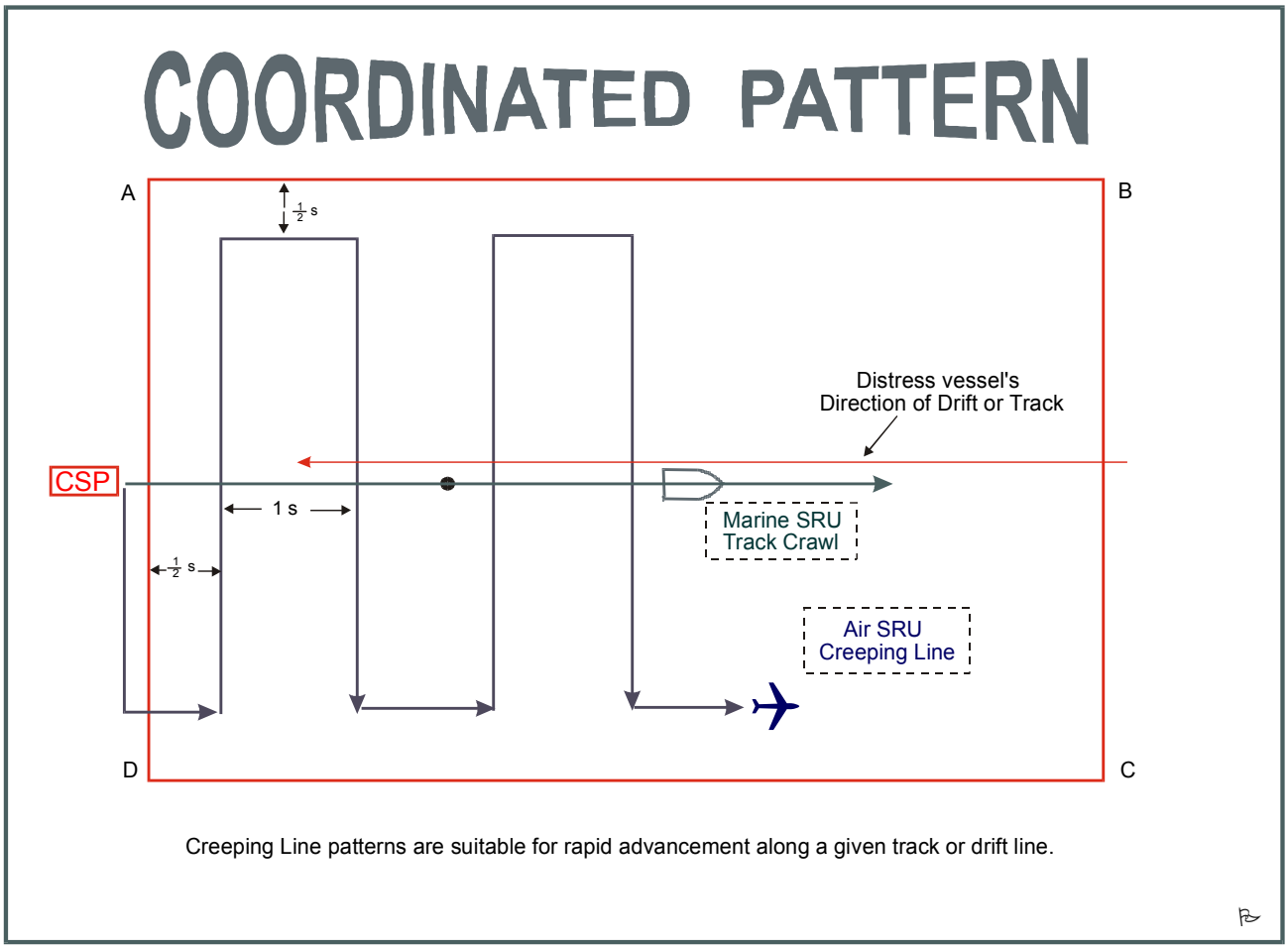


The Coordinated Search Pattern:

Commonly used when an aircraft and a vessel are combined in a search.

The vessel follows a *track line*, while the aircraft completes a *creeping line* pattern. While the vessel is searching, it is also serving as a reference point for the aircraft.

This method is effective when the search area is a large and open area.



Creeping Line patterns are suitable for rapid advancement along a given track or drift line.

Track Spacing (S) and Sweep Width (W)

DEFINITION:-

Track Spacing (S) – The distance between adjacent search tracks, measured in nautical miles.

General information:-

Decreasing track spacing (S) results in a higher likelihood of the search object being sighted. However, a narrower track spacing increases the time required for a search unit to cover the search area. Alternatively, more search units would be required to complete the search of an area in a given period of time. Generally, JRCC will assign a track spacing based on a formula to produce an optimum *probability of detection.*

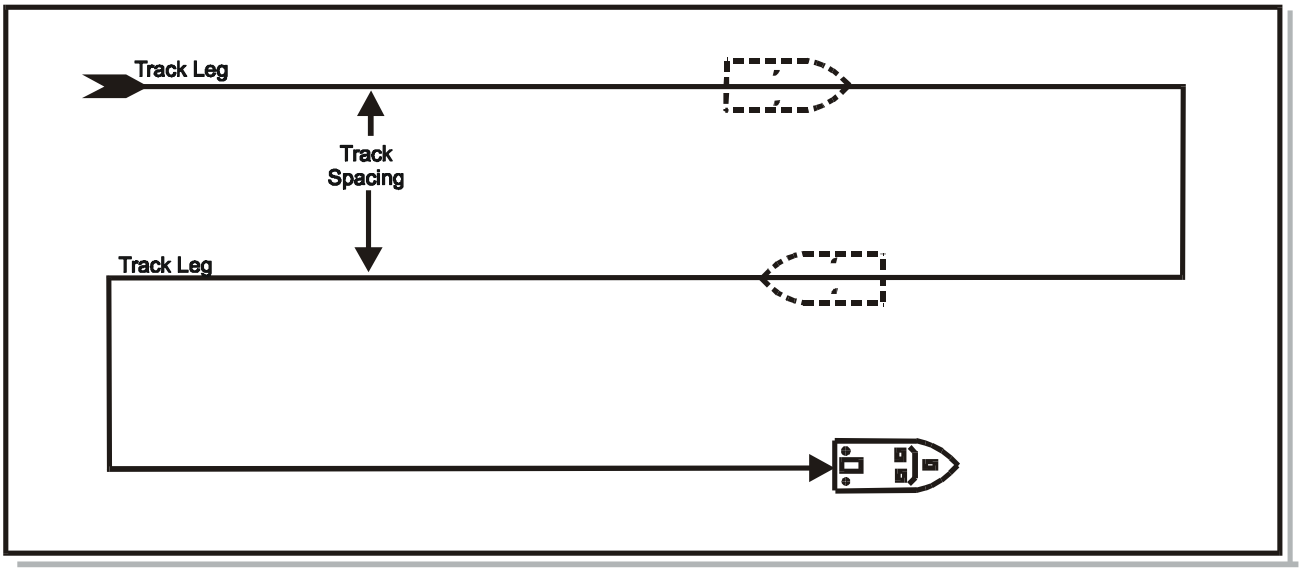


Illustration 10

The ultimate distance between adjacent search tracks (S) is determined by the sweep width. In effect, **the sweep width and track spacing should be the same**.

DEFINITION:-

Sweep Width (Wu):- A measure of the detection capability based on target characteristics, weather and other variables. A sweep width, uncorrected, is determined using the accompanying table identified as **Wu.**

General information:-

A pictorial representation of sweep width is shown below. The width is measured in NM and extends outward from the search vessel equally in both directions. A 3 NM sweep width covers a 1.5 NM distance on either side of the SRU.

Caution: Be careful not to associate Sweep Width with what a lookout can see.

Although there is a connection, the determination of the sweep width is not based directly on a lookout's ability to detect a target. You will note that sweep width extends outward from both sides of the vessel, while a lookout would likely be searching only on one side.

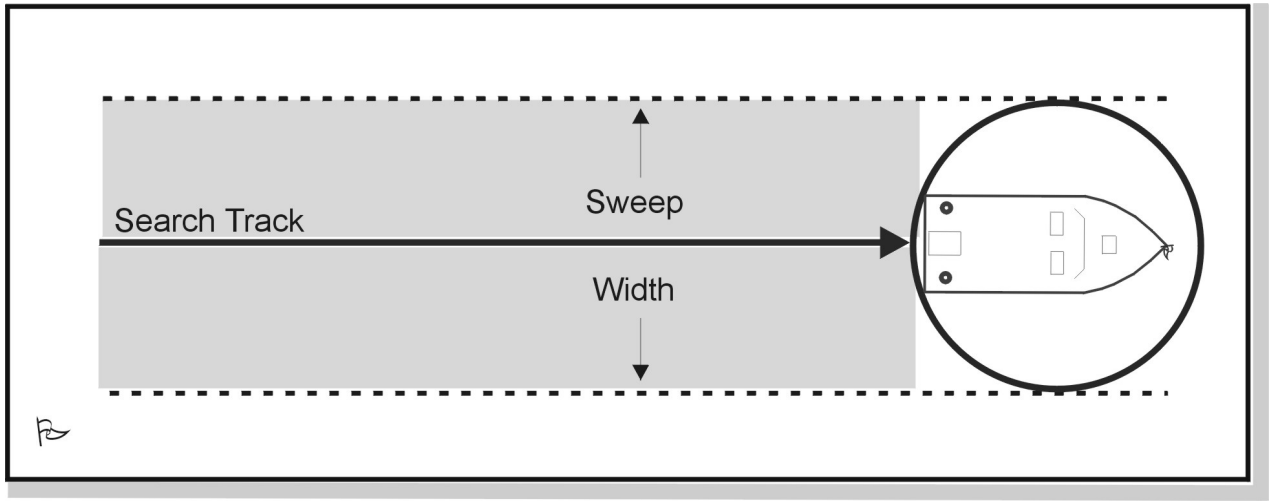


Illustration 11

How is Sweep Width (Wu) determined ?

With reference to the Uncorrected Sweep Width table shown below:

A) Establish current visibility (top of chart) – ex. 10NM
B) From left column, locate size and type of search object – ex. 5–8m power boat.
C) Locate point of intersection – from (A) and (B) above = 3.3 NM.
D) Therefore the Sweep Width (Wu), without any correcting factors applied is 3.3 NM.

	VISIBILITY IN NM Small Boat SRU (17m UTB)					
	1	3	5	10	15	20
Person in the water	0.2	0.2	0.3	0.3	0.3	0.3
Raft - 1 person	0.7	1.3	1.7	2.3	2.6	2.7
Raft - 4 person	0.7	1.7	2.2	3.1	3.5	3.9
Raft - 6 person	0.8	1.9	2.6	3.6	4.3	4.7
Raft - 8 person	0.8	2.0	2.7	3.8	4.4	4.9
Raft - 10 person	0.8	2.0	2.8	4.0	4.8	5.3
Raft - 15 person	0.9	2.2	3.0	4.3	5.1	5.7
Raft - 20 person	0.9	2.3	3.3	4.9	5.8	6.5
Raft - 25 person	0.9	2.4	3.5	5.2	6.3	7.0
Power Boat- < 5m	0.4	0.8	1.1	1.5	1.6	1.8
Power Boat - 5 to 8 m	0.8	1.5	2.2	3.3	4.0	4.5
Power Boat - 8 to 12 m	0.8	1.9	2.9	4.7	5.9	6.8
Power Boat - 12 to 20 m	0.9	2.4	3.9	7.0	9.3	11.1
Power Boat - 20 to 30 m	0.9	2.5	4.3	8.3	11.4	14.0
Sailboat - 5 m	0.8	1.5	2.1	3.0	3.6	4.0
Sailboat - 7 m	0.8	1.7	2.5	3.7	4.6	5.1
Sailboat - 8 m	0.9	1.9	2.8	4.4	5.4	6.3
Sailboat - 10 m	0.9	2.1	3.2	5.3	6.6	7.7
Sailboat - 12 m	0.9	2.3	3.8	6.6	8.6	10.3
Sailboat - 16 m	0.9	2.4	4.0	7.3	9.7	11.6
Sailboat - 20 to 25 m	0.9	2.5	4.2	7.9	10.7	13.1
Sailboat - 25 to 30 m	0.9	2.5	4.4	8.3	11.6	14.2
Ship - 30 to 50 m	1.4	2.5	4.6	9.3	13.2	16.6
Ship - 50 to 100 m	1.4	2.6	4.9	10.3	15.5	20.2
Ship - Over 100 m	1.4	2.6	4.9	10.9	16.8	22.5

Uncorrected Sweep Width (Wu) for Visual Search

Illustration 12

Corrections to Sweep Width (Wu)

The Sweep Width table shown in Illustration 12 only applies under ideal conditions.

Wind and Fatigue will reduce Wu.

Although JRCC coordinators will provide the necessary information, you should have some understanding of basic principles.

For example:-

1. When the weather factor (wind) **(f_W)** is equal to or greater than 15 knots and the target is a PIW or a vessel less than 10m, a given sweep width (Wu) is **reduced by multiplying by 0.5.**

2. If wind **(f_W)** exceeds 25 knots the Sweep Width (Wu) is **reduced by multiplying by 0.25**

3. If the crew is fatigued, **(f_F)**, the Sweep Width (Wu) is **reduced by multiplying by 0.9.**

In the example at the top of the previous page, an uncorrected Sweep Width (Wu) of 3.3 NM was established.

If the wind was > 15 kts., the Sweep Width (Wu) would be reduced by 50%, (i.e. multiply 3.3 X 0.5) to 1.65 NM and rounded off to 1.5 NM.

The corrected Sweep Width is referred to as "W"

COVERAGE FACTOR

Definition:-

Coverage Factor **(C)** is a measure of search effectiveness or quality. **(C)** is a function of Sweep Width and Track Spacing.

$$C = \frac{W}{S}$$

Since Track Spacing is determined by the Sweep Width calculations, both numbers should be the same.

Therefore, the Coverage Factor (C) will have a value of 1.

If the Track Spacing is rounded off to a lower value for navigation purposes, the value of **(C)** would be slightly greater than one (1).

Earlier in this module, you learned that Sweep Width **(Wu)** varies considerably depending on the characteristics of the search object and visibility (Illustration 12).

You also learned that corrections may be applied to the Sweep Width raw data to establish a corrected Sweep Width – **W**.

This Sweep Width **(W)** establishes the Track Spacing.

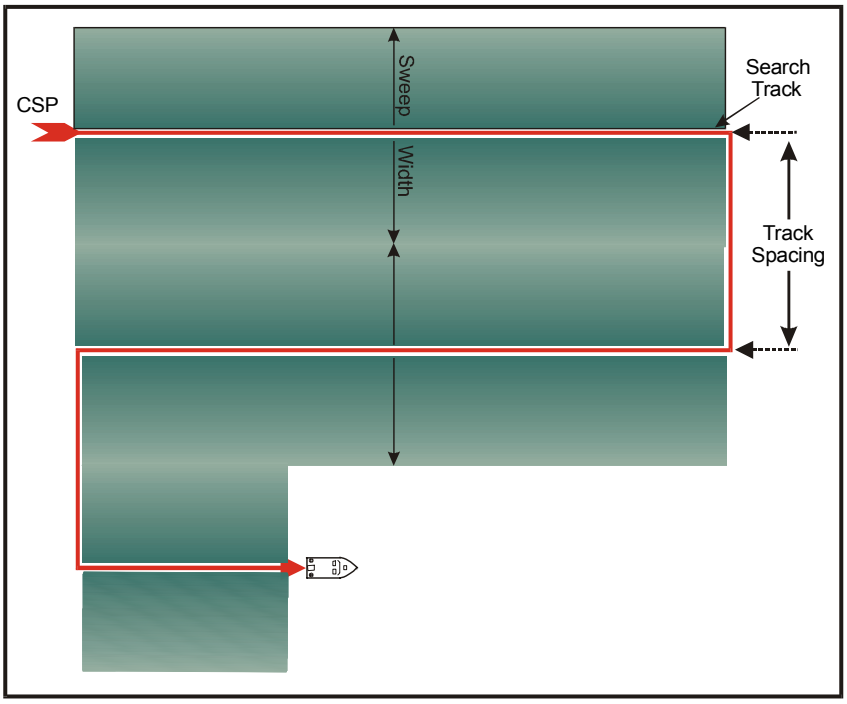
The SRU receives the information from JRCC and undertakes a search.

With reference to the illustrations (13) and (14), we will assume that:

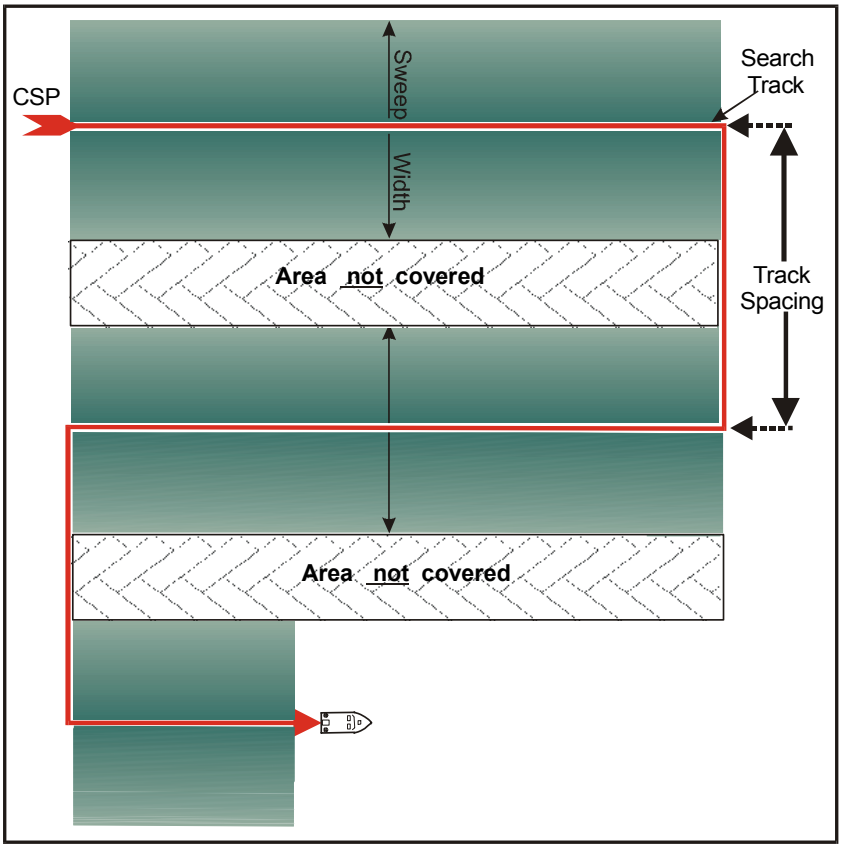
- the search object is a vessel < 5m.
- The wind is 18 kts.
- the crew is fresh
- visibility is 5 NM and
- track spacing is 0.5 NM.

Illustration 13 demonstrates how an SRU Coxswain maintains a track spacing which adequately covers the search area.

Illustration 14 indicates a situation where the search vessel has not maintained the required track spacing. Note the areas not covered.



Track Spacing and Sweep Width are equal



Track Spacing is greater than Sweep Width

Module 8

SEARCH PROCEDURES

- ***Spotters***

The search phase of any case is the most demanding of a vessel master's skill. It requires a technical knowledge of search planning and a degree of concentration that is very high. Performing the duties of a spotter means more than "just keeping the eyes open". The success of the entire operation depends upon the vigilance of the observer. Upon the observer lies the responsibility for the lives of those in peril. If the spotter passes those in peril without spotting them, their chance of rescue will be lost. Observers should always carry out their duties as if they were the person in distress. The following notes should give guidance as to the importance of the responsibilities assigned, proper procedures and methods of reporting.

Vessel Master

The vessel master has many duties to perform including the safe navigation and control of the vessel, communications and proper plotting of the vessel's location. The master is also responsible for the proper placement of and instruction to the spotters. The master of the search vessel should not assign himself any spotter duties except those relating to the safe navigation and control of the vessel.

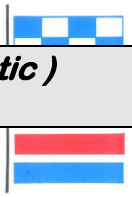
Search Object Briefing

Spotters must be briefed with all the information available to the vessel master. Spotters should be informed of the nature of the distress and the possibilities that may have evolved from the situation. The items a spotter should be aware of are as follows:

Surface Craft Afloat: size, colour, name, distinctive markings (superstructure, radar), number of antennas, license numbers.

Other Items of Distress: life rafts or lifeboats, flotsam from the distress craft, i.e. cushions, possible oil slick, people in the water.

Visual Distress Signals:

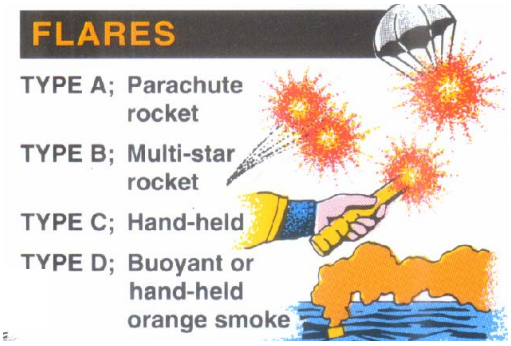


♦ a flag hoist of “N” over “C”
(a blue and white checkered flag
over a blue, white and red striped flag),

- “SOS” (three short, three long, three short)
flashed with the use of a flag, light or mirror,

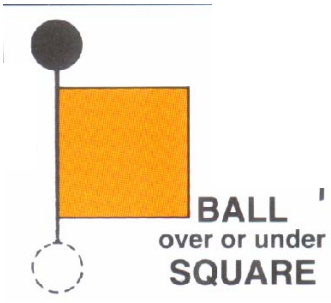
- any sea staining dye

- distress pyrotechnics



♦ waving arms up and down

- a black ball over or under a square,



Or any of the following:

- smoke or flames on board a vessel,
- strobe light flashing at 50 to 70 per minute
- any square shape
- orange canvas with black ball and square

Reference: Annex 4 – Collision Regulations

Audible Distress Signals:

- gun shot at 1 minute intervals
- radio telephone alarm
- continuous sounding of a fog signal
- ELT – Electronic Locator Transmitter
- EPIRB – Emergency Position Indicating Radio Beacon
- Spoken word Mayday

Reference: Annex 4 – Collision Regulations

Night Vision Equipment:

Night vision binoculars should be used in a similar manner to daytime binoculars in that they are used to confirm the presence of an object. They should not be used continuously.
This equipment is not suitable when there is an illuminated background such as lights on shore.
NVG equipment should not be used when illuminating flares have been deployed or in conjunction with search lights.
JRCC should be advised through a SITREP when NVG equipment is being used or available.

Spotter Assignment

QUICK FACTS
Lookouts

- ***TRAIN*** *spotters carefully*
- ***BRIEF*** *the observers in all details*
- ***LOCATE observers*** *as high as possible*
- ***ROTATE spotters*** *regularly*
- ***MOTIVATE spotters regularly***
- ***REST*** *spotters in rotation*

GOOD SPOTTERS FIND WHAT IS TO BE FOUND

The assignment of spotters will depend entirely upon the number the vessel master has available. The vessel master requires a minimum of two spotters to be an effective search vessel. Insufficient spotters would jeopardize the search effort. The following should be kept in mind when assigning a position:

- Spotters should be posted as high as safely possible given weather and sea conditions. This increases the visible horizon and enables the spotters to look down upon the search area;
- If the vessel has radar and there are sufficient observers, a person should be assigned to the unit to report echoes on the screen. The master would direct the information to the person performing the duties of the spotter in that sector.

  Spotters will suffer from fatigue and should be rotated at least every 30 minutes from the sector assigned. A new area will increase the effectiveness of the observer. A rest break should be scheduled in the rotations and should include some refreshments, such as sandwiches, and hot liquids (hot chocolate- not coffee).

- The sectors assigned will depend on the *number of spotters. The vessel* master should have more than one spotter than is required to perform the type of sector assignment organized. This person would be resting and would be rotated into the system after the first half hour.

The assignment types are outlined below:

Spotter Procedure

The spotter should at all times be conscious of the fact that there is no one else scanning the search sector assigned to them. A methodical approach is needed so that the object is not missed due to haphazard searching.

- The spotter should keep the eyes focused straight ahead and move the entire head to reduce eye fatigue.

- The spotter should focus the eyes on a spot in the water every 10-15 degrees. This is about one fist width of the horizon if the arm is extended straight out in front of the body.

- If the spotter spots an object in the water, sight contact must be maintained with the object. An easy way to maintain eye contact is to point to the object. This method will also help the spotter direct the vessel master to the object's *location.*

- The observer must inform the vessel master of the sighted object and direct the master to the area. An easy method of informing the master is by using the "clock method" of reporting. The spotter must imagine the vessel in the centre of a clock face. The bow will be at 12 o'clock and the stern at 6 o'clock. Sightings would be reported as an "object at 9 o'clock". This would inform the vessel master to turn 90 degrees to port. The spotter would continue reporting the position until the vessel master has the object in sight.

- Methodical approach is suggested and could be used as a guideline for observers. The spotter should search out and back a few times and then should give the eyes a rest by focusing on something on board for a short period, preferably not more that 15 seconds.

- Sunglasses should be used when scanning up-sun and are recommended for continuous use during days of bright sun or high glare conditions. Infra-red and ultra violet impervious sunglasses provide the best protection to the lookout.

- Binoculars should not be used for scanning. They should be kept available for immediate use so the observer may use them to identify an object spotted.

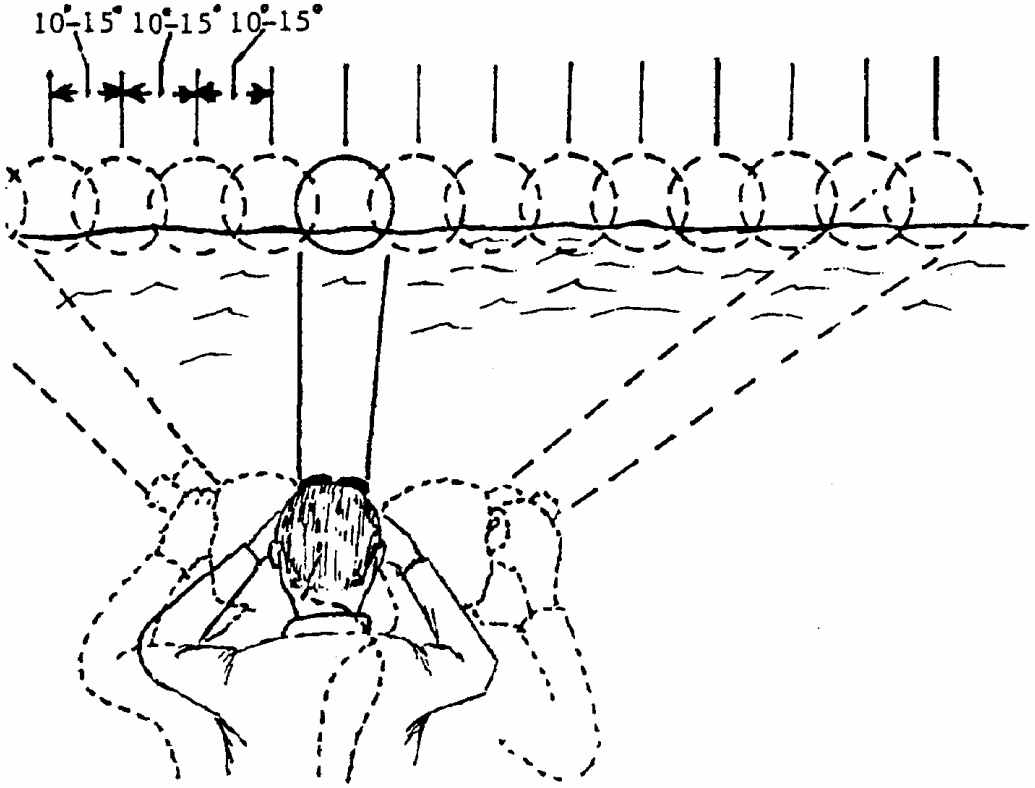
- The faster the vessel is proceeding, the faster the spotter must scan to complete the assigned area. The speed a vessel should operate at during a search depends upon the characteristics of the search object and the search conditions. Generally, a search speed of 6 to 8 knots is acceptable and should not exceed **ten (10) knots** unless the search object is very large. The smaller the search object, the slower the search speed.

- At night cabin lights and personal flashlights should have red lenses on them in order to preserve night vision. It takes about 30 minutes to recover night vision after being exposed to white light.

- Remember to also stop and listen for horns, voices (yelling) and whistles.

Height of Eye vs Horizon Range	
Height in Feet	**Nautical Miles**
5	2.6
6	2.8
7	3.0
8	3.2
9	3.4
10	3.6
11	3.8
12	4.0

Note: If a spotter is posted at a height of 10 feet and the search object has a height of five feet, then the theoretical maximum distance that the search object might be detected is 3.6 + 2.6 = 6.2 NM.

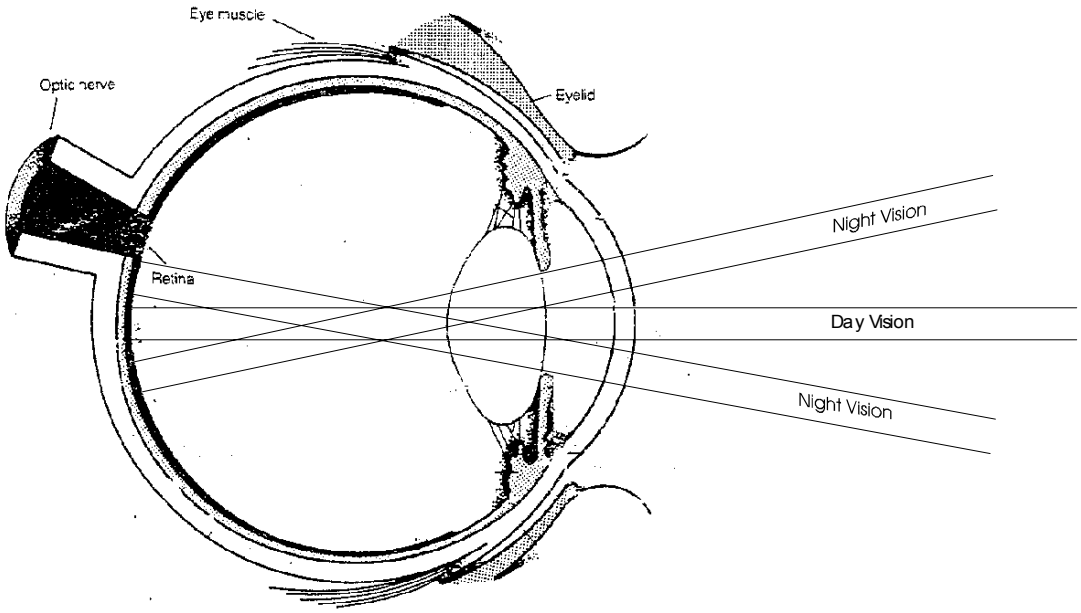


SCAN - STOP - FOCUS - SCAN

QUICK FACTS

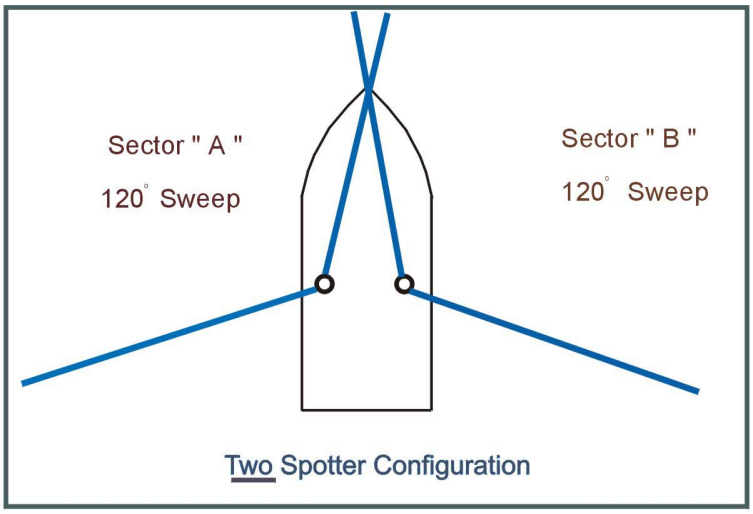
CAUTIONS FOR SPOTTERS

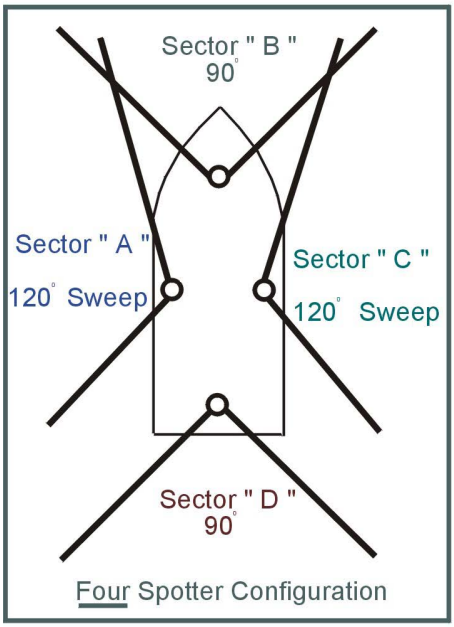
- *SCAN - STOP - FOCUS - SCAN*
- *Use sunglasses in sunshine*
- *Use red lamps in darkness*
- *Use binoculars sparingly*
- *Change places regularly*
- *Report all suspicious objects*
- *Know that you are important*

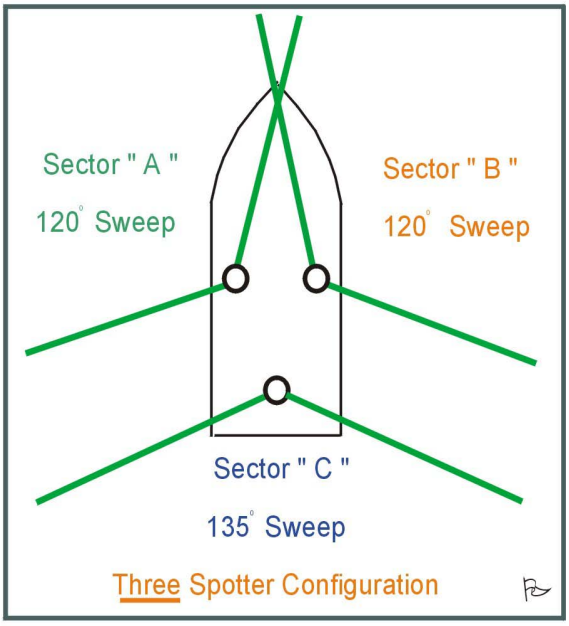


THE EYE AND NIGHT VISION

DIAGRAM OF 2, 3 AND 4 PERSON SPOTTERS







SPOTTER POSITIONING

Module 9

PERSONAL SAFETY & SELF RESCUE

General

- Whenever any CGA members are involved in SAR operations, care must always be taken to ***ensure the safety of the vessel and crew***. It is the master's responsibility to safeguard the vessel and crew.

- CGA requires the wearing of an approved personal flotation device or lifejacket at all times during SAR operations. CGA members are advised to choose a flotation device that is comfortable, offers hypothermic protection, and durable enough to withstand the rigors of SAR operations. Auxiliarists should test the performance of their flotation devices under controlled conditions (i.e. pool).

- Dress warmly, preferably with ***layers of natural fiber clothing*** (wool). Toques, balaclavas, gloves, mitts and extra socks are often essential items even in seemingly mild conditions.

- ***Keep dry.*** Water conducts body heat at twenty-five times the rate of air and heat loss leads to hypothermia. Dry suits and rain gear are important supplements to your floatation device.

- Use ***safety lines*** when conditions dictate to ***minimize the chance of a person falling overboard.***

- Carry: a whistle, strobe light, several pocket sized flares, heliograph, small flashlight, illuminating sticks and ***attach them where applicable to your outer garments with lanyards***. (Survival vest)

- ***Carry*** a pocket knife, ensure that the knife is sharp prior to packing it.

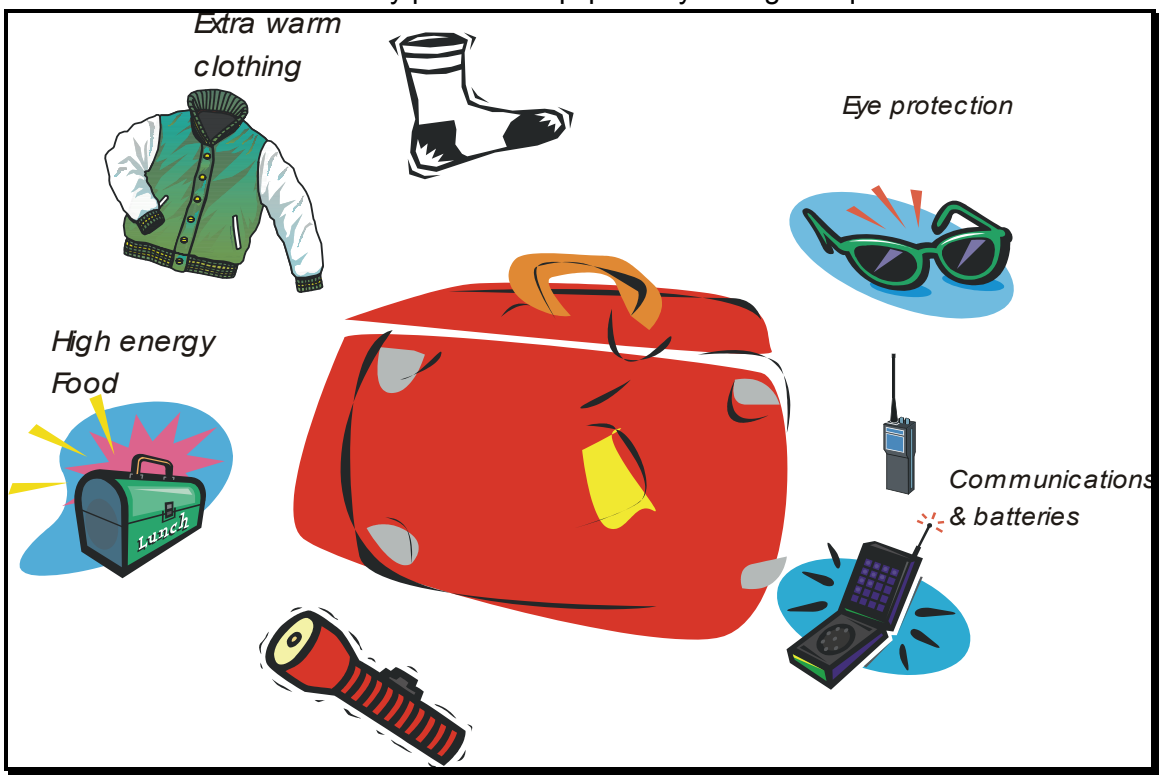
- It is a good idea to carry some compact high energy foods in your pockets to sustain ***your blood sugar level*** during extended SAR operations.

- Open fast vessels require eye protection***; sunglasses*** for day use, and ***goggles or clear glasses*** for night operations.

- ***Alcohol impairs judgment*** and increases the risk of hypothermia. If you have consumed alcohol within four hours of being called out, reconsider your role.

- Crew members on CGA SAR vessels should ***know where all emergency equipment is stored*** on board and be versed in its use.

- At home, have a ***KIT BAG ready for quick response*** to a call out. The kit bag should contain all of the necessary personal equipment you might require in all conditions.



Determinations of a recent (2002) United States
Coast Guard Board of Inquiry

In March of 2001 a 21 foot (6.5m) foam collar USCG vessel on night patrol on western Lake Ontario (Youngstown N.Y.) capsized and two lives were lost. Among the findings of the Board of Inquiry:

a) the crew did not report changes in their float plan
b) exposure clothing was not properly worn
c) crew did not appreciate the weather and sea capabilities of their vessel
d) crew did not keep rescue and survival equipment in serviceable condition – e.g. dead batteries in portable equipment
e) crew failed to appreciate hypothermic inducing conditions
f) crew did not train for capsizing / sinking of their vessel
g) plus many other small insignificant errors and omissions which contributed to their untimely deaths.

- **Auxiliarists should be aware that cotton undergarments retain moisture and accelerate hypothermia.**

- **Crews should be encouraged to wear a survival vest which would contain flares and other emergency signaling equipment.**

Carbon Monoxide (CO) Poisoning

- Carbon Monoxide is a colourless, odorless and tasteless gas. Its weight is about the same as air and tends to distribute itself evenly in a given space. CO does not rise or fall, as do some other gases.
- Gasoline engines produce more CO than diesel engines.
- All open flame devices produce CO.
- Search and Rescue vessel crews may be susceptible to CO poisoning from exhaust fumes when the vessel is proceeding on a downwind search leg.
- The risk of CO poisoning increases in vessels with enclosed cabins that open to the stern.
- Always ventilate any area where an engine is operating and where open flame appliances are used.
- Do not use portable generators below decks.

At 200 parts / million, a 60 minute exposure to CO will cause headaches. At 800 parts / million, a 30 minute exposure will result in permanent brain damage and / or death.

A CO detector exposed to 400 PPM (0.04%) must alarm within 15 minutes.
An exposure to 400 PPM of CO may cause headaches in average adults after 35 minutes, but can cause death after 2 hours.

HYPOTHERMIA

Your survival will depend on your forethought and preparation more than the actions taken after you find yourself in the water.

Preventing hypothermia is best accomplished by wearing good thermal protection and of course ensuring that you don't fall overboard in the first place.

Additional Protection:

Dry suit Wet suit Immersion suit Survival suit Exposure coverall

---

INFLATABLE
P.F.D.'s
are *not approved*
for use on CCGA vessels
when that vessel is
on an official tasking.

Unsafe Practices

QUICK FACTS

UNSAFE PRACTICES

- ***CGA vessel crews must not transfer fuel while at sea***
- ***CGA vessel crews must not boost dead starter batteries***

TOWING IS A SAFER SOLUTION

Vessel Out of Fuel

It is important to note that it is the policy of the CCGA (C&A) not to supply fuel to vessels that have exhausted their own supply. The receiving vessel may use a mixture that is different from the one that is offered (i.e. outboard with oil mix), which may damage the engine. Also, transferring fuel may lead to spillage especially in any sea state other than calm. The spilled fuel may pool in the bilges or other areas and an explosion can occur whenever a circuit is opened or closed. This includes the automatic operation of a bilge pump, a light being turned on or the engine being started.

Dead Batteries

If you encounter a vessel that has dead batteries, do not assist with jumper cables.

This is policy with the CCGA (C&A).

With flat batteries, blowers will not be working and sparks from jumper cable contacts may cause the explosion of the battery or gasoline, propane or other flammable vapors in the bilge.

Module 10

MARITIME DISASTER SCENE

DEFINITION:

Any event that causes a number of persons to require medical attention in numbers beyond the capacity of the agencies normally involved.

RESPONSIBLE AGENCIES FOR THE SRU

JOINT RESCUE CO-ORDINATION CENTRE

The Joint Rescue Co-ordination Centre or JRCC, is an operation staffed by Canadian Armed Forces and Coast Guard personnel. The JRCC receives reports of an emergency situation and tasks Coast Guard, Coast Guard Auxiliary, and Canadian Forces resources as required. During a search at sea, JRCC provides executive control of the search operation. JRCC also provides an interface with the Emergency Health Services (ambulance and air-ambulance), the RCMP, OPP or municipal police, and any non-aligned resource or service.

CANADIAN COAST GUARD

The Coast Guard **and** the Coast Guard Auxiliary provide the marine element of the search and rescue organization and are controlled by the JRCC.

The role of the Coast Guard in a multi-casualty situation will depend on where it occurs. If the incident is at sea, triage, patient care and possible evacuation to shore for transfer to the ambulance service must be carried out by the Coast Guard. When Coast Guard personnel go ashore to assist civil authorities during a disaster the commanding officer will probably be asked to take direction from the civil authorities.

The Coast Guard Radio Station *or CGRS* connects the SAR units with the JRCC either by means of message passing or by direct telephone patch.

CANADIAN ARMED FORCES

In a disaster the Canadian Armed Forces response may include Air Transport and Rescue squadrons. How these resources are deployed will depend on the JRCC, based on the advice of the On Scene Commander (OSC). If Search and Rescue Technicians or SAR TECHs are deployed they can provide triage or advanced care at the casualty collecting area, and will accompany patients to the hospital when military aircraft are used for this purpose.

MAJOR MARITIME DISASTERS OR MAJOR AIR DISASTERS (MAJAID)

When very large numbers of patients are encountered and existing hospitals are too far away or unable to handle cases, the military has portable hospitals. These can be airlifted together with medical staff into the disaster area. One such unit is located at CFB Trenton.

ROYAL CANADIAN MOUNTED POLICE, ONTARIO PROVINCIAL POLICE AND MUNICIPAL POLICE.

According to jurisdiction, either the RCMP, OPP or municipal police will attend all multi-casualty situations. The role of the police in such cases is to secure the incident scene, provide control of vehicles and the movement of people, gather evidence and conduct the investigation.

KEY PERSONNEL FOR THE SRU

JRCC CONTROLLER

The JRCC Controller will usually be either a Coast Guard Officer, in the event of a marine situation or, a Canadian Forces Officer if air elements are involved.

The controller initially receives indication of a problem and assigns appropriate resources. During the incident the controller gives direction to the OSC and provides a communication interface between agencies.

ON SCENE COMMANDER:

The OSC may be in command of a SAR unit, usually the largest, most stable platform, with the biggest executive structure. Depending on the type of vessel the OSC may delegate the actual running of the vessel to his subordinates in order to be able to concentrate on managing the incident.

As soon as the first reliable personnel are on scene the OSC will try to determine if the scene is STABLE or UNSTABLE, and convey this information to the triage officer and to the personnel who are to board or enter the distress area.

As the incident progresses the OSC acts as a clearing house for information to and from JRCC, and all other agencies.

DISASTER SCENE LOGISTICS:

RESCUE SCENE STABILITY:

No specific plan can apply to every multi-patient event and this is even more true of the marine environment. In this environment the logistical structure will depend entirely on the rescue scene stability.

Rescue scene stability relates to the safety of the disaster scene. Rescue scene stability must be assessed quickly and will probably need to be continually re-evaluated as conditions change. Some of the factors influencing rescue scene stability are as follows:

- Vessel taking on water, losing stability
- Ability to stop water intake
- Ability to pump out water or keep water level constant
- Changing sea state that adversely affects vessel stability
- Ice accumulation affecting vessel stability
- Fires that are out of control
- Risk of explosion
- Toxic gases from fire or engine exhaust or some other source
- Wind direction affecting the distribution of toxic gas
- Navigational hazards.

The **individuals** who undertake to assess scene stability should be competent to judge all these factors. If the vessel or situation is complex this person should be a ship's officer, where possible.

Once a judgement of scene stability is made the OSC shall be advised and will direct the rescue effort accordingly.

STABLE SCENE:

Triage, first aid and evacuation can take place with no regard to imminent hazard. **Urgent category patients are evacuated first.**

UNSTABLE SCENE

Possibly a reverse of the aforementioned in that the **uninjured may need to be evacuated before the injured, and the most severely injured, evacuated last.**

You can see that rescue scene stability determines how casualty management will occur. For this reason, scene stability must be determined as early as possible despite the difficulties presented by the variables mentioned.

THE DISASTER SCENE:

The disaster scene is the area or place where casualties have occurred. Although not all casualties may be found in this area (some may have walked, run or swam from the area). This will generally be the area in which urgent and some delayed category cases will be found, and of course, the deceased.

Patients found in the disaster area or scene shall be assessed by the triage officer, tagged with METTAGS and removed to the casualty collection area as designated by the METTAGS.

THE CASUALTY RECEPTION POINT:

The casualty collection area should be located between the disaster area and the evacuation point from which survivors can be transported to hospital or clearing area. Ideally, the treatment area will be private:

Free of any hazard
Close to the disaster area
Quiet
Dry
Well illuminated.

THE EVACUATION POINT:

The evacuation point will be selected by the OSC and ideally will have the following characteristics:

Be free of hazard.
Provide a one-way or 'circuit' access for vehicles *.
Be easily identified by vehicle operators.
Be close to the casualty collection area but not so close
that patient care is disrupted by rotor wash or vehicle noise.

* Vehicle = Aircraft, ambulance, boat etc.

RESCUE SCENE LAYOUT:

The following illustrations show examples of different site layouts that may be relevant to marine disaster management as well as the 'classical' layout used for a multi-casualty disaster on land.

Triage Priority (use of METTAGS)

If the disaster scene is non-stable the priorities are reversed so that the greatest number of persons can be recovered.

Lowest Priority	Second Priority	Highest Priority
Green tag	***Yellow tag***	***Red tag***
Fractures and other injuries of a minor nature	Burns	Airway & breathing difficulties
Obviously mortal wounds where death appears certain	Major or multiple fractures	Cardiac arrest if sufficient help is available
Obvious dead	Back injuries with or without spinal cord damage	Uncontrolled severe bleeding
Cardiac arrest if sufficient help is not available		Severe head injuries
		Severe medical problems
		Open chest wounds
		Shock

Clinical death (black tag)

Hold for mortuary or transportation after all other category patients have been transported. These casualties are non-salvageable and regardless of the efforts of the rescuer they will die or are already dead.

Highest Priority (red tag)

Rapid transportation by ambulance to a hospital is indicated. Casualty is in need of definitive care or higher levels of medical treatment than available at the scene to stabilize.

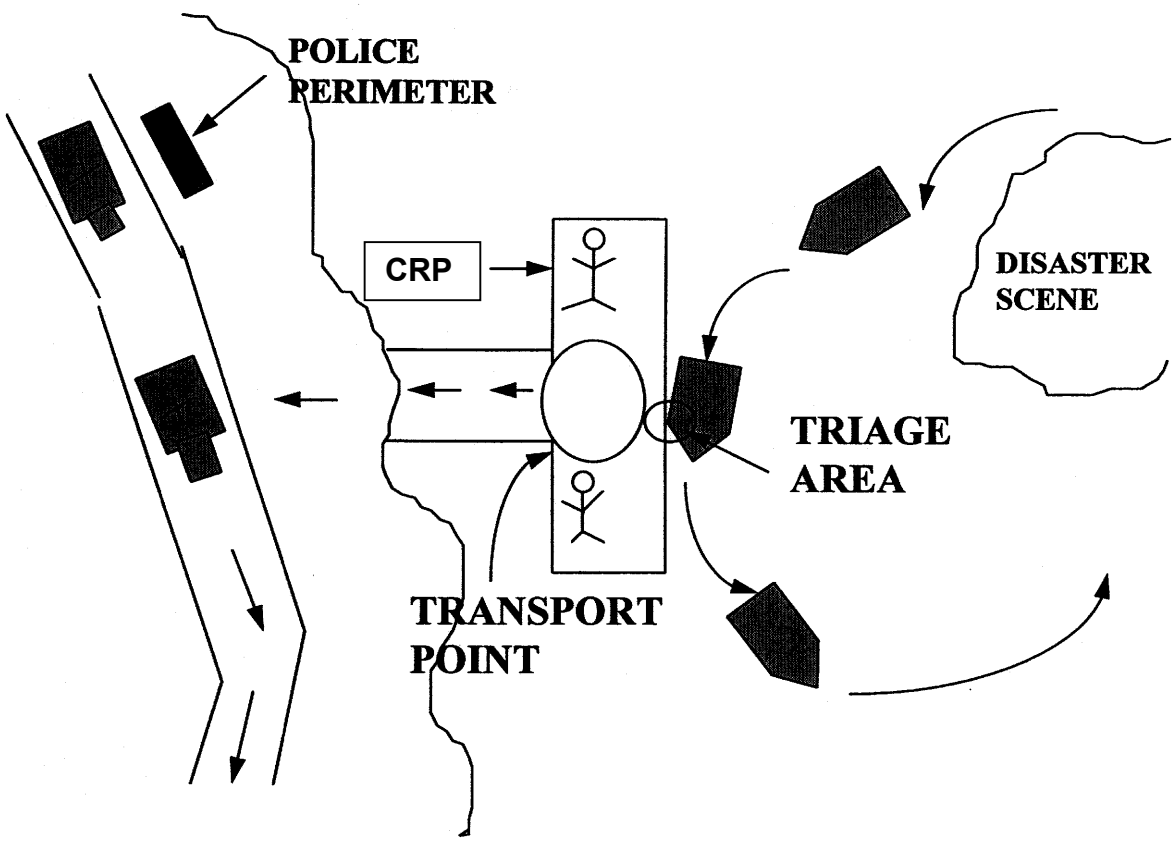
Second Priority (yellow tag)

Delayed transportation by ambulance to a hospital would not place the patient in jeopardy

Lowest Priority (green tag)

Ambulance transportation to a hospital is not necessary. These are the walking wounded and should find a secondary means of transport to the hospital.

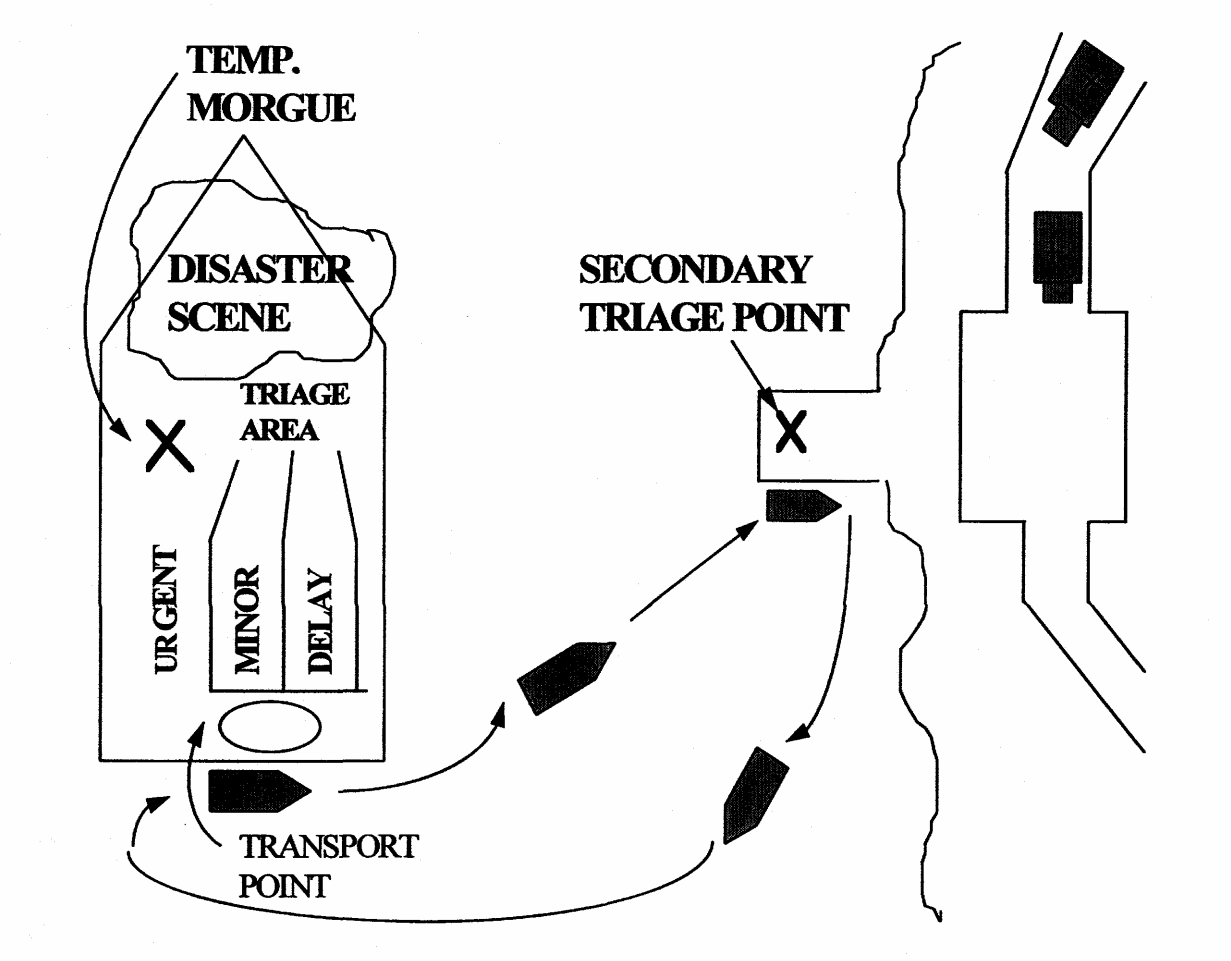
POSSIBLE LAYOUT: SMALL VESSEL



This scene depicts small vessels engaged in rescuing and transporting victims from the disaster scene to a dock where they can be triaged and organized for transportation.

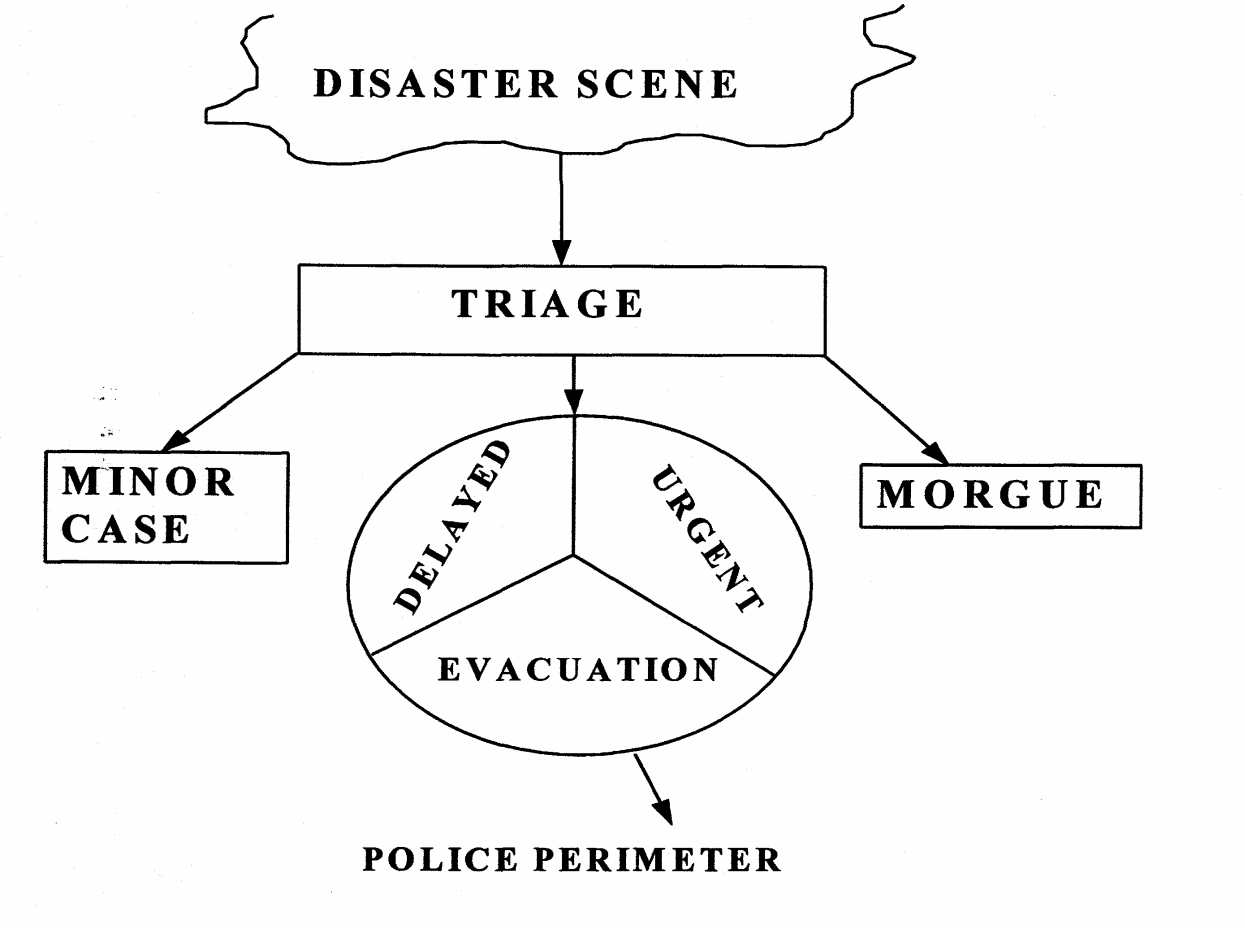
This illustration is a large vessel on which some emergency has occurred. The scene is stable. The casualty reception point and transport points are set up on the distressed vessel.

POSSIBLE LAYOUT: LARGE VESSEL



Finally, the classic theoretical set up of a rescue scene on land as would be used in the case of an aircraft crash, or some similar emergency.

THEORETICAL LAYOUT OF A DISASTER SCENE



HANDLING OF CASUALTIES

The selection of a casualty reception point (CRP) is generally based on the distance to the **location** of the incident and the capability of receiving survivors or the distressed vessel. As a general rule this is the closest and safest location that the SRU can attain.

-CRP's are more easily chosen when their facilities have been predetermined and the locations pre-selected and recorded at an JRCC. Major urban centres have disaster plans which may assist in this selection process.

If there is a large number of casualties a Major Air Disaster (MAJAID) or a Major Maritime Disaster (MMD) may be declared.

In this situation existing plans are brought into action. Outside agencies are notified and will make their resources available to help in the resolution of the incident.

HANDLING HUMAN REMAINS

LEGAL ASPECTS:

1. Only a medical doctor may pronounce a person dead.

2. Any layperson may assume death.

The pronouncement of death is a legal act carried out by a physician and it is usually not tied to an operational or logistical requirement to deal with the deceased.

There is a practical requirement for lay persons to be able to set the deceased aside in order to deal with others who are living. The assumption of death should in the context of multi-patient assessment, be made by the triage officer.

When persons are assumed to be deceased they should not be removed from the disaster site until all the living have been evacuated. Persons who are assumed to be deceased are the responsibility of the local coroner or, in his absence, the RCMP or municipal police.

HANDLING THE DECEASED

A cardinal rule of disaster management is: **living before the dead.**

Leave the deceased untouched until all living patients have been cared for and evacuated.

If investigative elements of the coroner's office or other authority are present at the disaster site the deceased may not be moved until preliminary investigation is complete. In the event of a major event on board a ship the investigation may not even begin until the ship is secured at a dock and authorities can go on board,

If representatives of the coroner or investigative authority are not present the OSC may be delegated by the coroner to exercise authority over the handling of the deceased.

If the bodies must be removed from the disaster scene but cannot be transported directly to a morgue, a temporary morgue will need to be established. Ideally, the bodies should be held in the temporary morgue only long enough to arrange transportation from the evacuation point to a proper morgue. The temporary morgue should be located at some point between the disaster scene and transportation point that affords a degree of privacy. The bodies should receive METTAGS but at this stage positive identification by relatives would not be appropriate and should not be attempted.

The identification of bodies is the responsibility of the coroner, his delegate, the RCMP or municipal police.

If bodies must be accommodated for an extended period of time, i.e. greater than eight or ten hours, refrigeration is necessary unless the ambient temperature is below freezing.

Refrigerated tractor trailers have been used successfully as an on site temporary morgue and later as a means of transportation to a proper morgue.

If the disaster scene is catastrophic as might be the case of an aircraft accident followed an intense fire, sorting the deceased may become difficult. Try to use one body bag for each body. Count one skull as one body.

SANITATION

As the products of decomposition can be quite toxic the use of thick rubber gloves during the handling of decomposing bodies is strongly recommended. Ideally, disposable smocks or coveralls should also be worn. If these are not available items of uniform issue that become contaminated can either be decontaminated by normal laundry procedures, or, if you wish, be discarded in favour of a replacement issue.

MARINE SAR INCIDENT COMMAND STRUCTURE

The simplest incident must be managed with a systematic approach. One SRU is often the sole response to a marine incident, but behind that unit is a system known as the Incident Command Structure, (ICS).

The ICS is designed to control the execution of operations during an incident to the best effect. That is:

- Operating strategies are formulated
- Manpower and technical resources are provided as required
- Operations are conducted effectively
- Information is disseminated constructively to all units involved and the media
- The incident is closed.

The system must have the ability to expand, as any incident becomes more complex or larger in scale. In the simplest of situations key personnel might include:

- JRCC Marine Controller
- Coast Guard Radio Station
- SRU Coxswain and crew.

In this situation JRCC will usually provide operating strategies, assign manpower and equipment and maintain communication links. The SRU Coxswain will conduct operations.

In more complex incidents the key personnel may expand to include:

- Marine Controller at JRCC
- Coast Guard Radio Station
- On Scene Commander (or Coordinator Surface Search)
- Coxswains of Individual SRU's
- Coxswains of CCGA Units
- Other SAR Units
- Vessels of Opportunity

On occasion, a CCGA Coxswain may be asked by JRCC to either formally or informally assume some "on scene" responsibilities. This may be the case when one or more *vessels of opportunity* are assisting in a search and you are the only SAR vessel with experience. In this case, you could become the ***"Coordinator Surface Search".***

Auxiliary coxswains should understand that in most instances, SAR incidents develop a natural evolution. A single vessel is initially tasked and with negative results, additional resources are deployed. Inevitably, either a CCG vessel and / or DND aircraft arrive " on scene ". One of these units would normally assume the duties of **"On Scene Commander".**

The decision to appoint an OSC or CSS lies with JRCC.

Only a PRIMARY SAR unit can be designated as an

" On scene Commander"

The responsibilities of the On Scene Commander or Coordinator Surface Search may vary a little, but the following is expected.

- Assigns Search Areas to Vessels
- Is a Communication link between SAR Vessels and JRCC
- Plots SAR Vessel Positions
- Plots Search Patterns
- Monitors Weather, Sea Conditions and Water Temperature
- Ensures Prompt Reporting
- Maintains a Radio Log

Auxiliary Coxswains who find themselves in such a position of responsibility must keep in mind that the captain of a vessel of opportunity is probably not familiar with search pattern protocol. Assigning such a vessel to do a “sector search” would most likely be interpreted as searching a sector of a chart rather than a search pattern!

RCMP / CCGA Vessel Guardian and Zodiac
Hay River NT

ANNEX

Collision Regulations (Summary)

Canada Shipping Act (Excerpts)

The Oceans Act (Excerpts)

A
SUMMARY OF THE
COLLISION REGULATIONS

1. RIGHTS OF WAY

(a) A **power driven vessel** shall keep out of the way of a

i) vessel not under command
ii) vessel restricted in her manoeuvrability (e.g.-in narrow channels constrained by size or draft)
iii) vessel engaged in fishing
iv) sailing vessel

(b) A **sailing vessel** shall keep out of the way of a vessel:

i) not under command (unable to manoeuvre)
ii) restricted in her manoeuvrability
iii) engaged in fishing

(c) A **fishing vessel** (commercial) shall, so far as possible, keep out of the way of a vessel
i) not under command
ii) restricted in her manoeuvrability

2. WHEN TWO SAILING VESSELS ARE APPROACHING ONE ANOTHER

i) when each has the wind on a different side, the vessel with the wind on the port side will give way.
ii) when each has the wind on the same side, the vessel to windward shall give way.
iii) in other cases, a vessel with the wind on the port side shall give way.

3. POWER BOATS

i) Any power driven vessels meeting head-on shall each alter course to starboard.
ii) When two power driven vessels are crossing, the vessel to starboard has the right of way.
iii) Any vessel overtaking any other vessel shall keep out of the way of the vessel being overtaken.
iv) Any vessel proceeding upstream shall yield to a vessel proceeding downstream**.**

4. RESTRICTED VISIBILITY (FOG)

A) Every vessel shall proceed at a safe speed adapted to the conditions & circumstances.
B) Every vessel which hears a fog signal from another vessel forward of her beam (close-quarters situation) shall reduce speed to the minimum required to maintain course. She shall if necessary, take all her way off.

4. **SOUND AND LIGHT SIGNALS**

Power Driven Vessels, when manoeuvring in sight of one another:
1 Short Blast (about 1 s.) = altering course to starboard
2 Short Blasts = altering course to port
3 Short Blasts = operating astern.

A vessel intending to overtake another shall indicate her intention by:
1 short blast (1 s.) to indicate overtaking on starboard side.
2 short blasts to indicate overtaking on port side.

The vessel being overtaken, if in agreement, sounds the same signal as given by the other vessel.

The vessel being overtaken, if **not** in agreement, signals at least 5 short & rapid blasts.

A vessel nearing a bend or an area of a channel or fairway where other vessels may be obscured by an obstruction, shall sound **one prolonged** blast.

Another approaching vessel shall answer with one **prolonged** blast.

6. SOUND SIGNALS - RESTRICTED VISIBILILITY (FOG)

a) Power Driven - 1 prolonged blast at 2 minute intervals
- if stopped, 2 prolonged blasts.

b) Sailing, fishing vessels and vessels towing -1 prolonged followed by 2 short blasts at 2 minute intervals.

c) A vessel being towed - 1 prolonged and 3 short blasts at 2 minute intervals and immediately after the towing vessel signal.

d) *A* vessel at anchor*,* and not in an anchorage, shall sound 3 blasts - 1 short, 1 prolonged and 1 short - in succession at 2 minute intervals.

7. NAVIGATION LIGHTS

Power-driven:-
i) A masthead light forward
ii) Sidelights
iii) A stem light

Sailing Vessel*:*
i) Sidelights
ii) A stern light **OR**
iii) If less than 20m, a combined lantern at or near the top of the mast.

These are extracts from the *Canada Shipping Act, Regulations For The Prevention of Collisions. "*These regulations may be cited as the *Collision Regulations."* **Mariners should always consult the full text as a guide to practice.**

Canada Shipping Act

Further to the CSA quotes in Module 3, the following sections should be of interest.

OFFENCE AND PENALTY

384. (5) If the master of a Canadian ship contravenes this section he is guilty of an indictable offence and liable to a fine not exceeding five hundred dollars or to imprisonment for a term not exceeding one year.

RIGHT TO SALVAGE

384. (6) Nothing in this section affects the provisions of section 451 and compliance by the master of a ship with this section does not affect his right, or the right of any other person to salvage.

MINISTER MAY DESIGNATE RESCUE CO-ORDINATORS

385. (1) The minister may designate persons, to be known as rescue co-ordinators, to organize search and rescue operations in Canadian waters and on the high seas off the coasts of Canada.

POWER OF RESCUE CO-ORDINATORS

385. (2) On being informed that a vessel or aircraft or survival craft thereof is in distress or is missing in Canadian waters or on the high seas off any of the coasts of Canada under circumstances that indicate it may be in distress, a rescue co-ordinator may:

(a) order all vessels within an area specified by him to report their positions to him;

(b) order any vessel to take part in a search for that vessel, aircraft or survival craft or to otherwise render assistance; and

(c) give such orders as he deems necessary to carry out search and rescue operations for that vessel, aircraft or survival craft.

PENALTY

385. (3) Every master or person in charge of a vessel in Canadian waters or a Canadian vessel on the high seas off the coasts of Canada who fails to comply with an order given by a rescue co-ordinator or a person acting under his direction is guilty of an offence and liable on summary conviction to a fine not exceeding five hundred dollars or to imprisonment for a term not exceeding six months.

DEFENCE

385. (4) No master or a person in charge of a vessel shall be convicted of an offence under subsection (3) if he establishes that compliance with an order or a rescue co-ordinator or person acting under the direction thereof would have exposed his vessel or tow or persons on board it to serious danger.

AIRCRAFT TREATED AS IF SHIP OR VESSEL

449. (1) The law, statutory and other, including the provisions of this Part, relating to wrecks, to the salvage of life or property and to the duty or obligation to render assistance to ships or vessels in distress applies to aircraft on or over the sea or tidal waters and on and over the Great Lakes, as it applies to ships or vessels.

(2) The owner of an aircraft is entitled to a reasonable reward for the salvage services rendered by the aircraft to any property or persons in any case where the owner of the aircraft would be so entitled had it been a ship or vessel.

(3) The Governor in Council may make modifications of and exemptions from the provisions of the law, statutory and other, in its application to aircraft, to such extent and in such manner as appears necessary or expedient.

ASSISTANCE

451. (1) The master or a person in charge of a vessel shall, so far as he can do so without serious danger to his own vessel, its crew and passengers, if any, render assistance to every person, even if that person is a subject of a foreign state at war with Her Majesty, who is found at sea and in danger of being lost, and if he fails to do so is liable to a fine not exceeding one thousand dollars.

SALVAGE NOT AFFECTED

(2) Compliance with subsection (1) by the master or person in charge of a vessel does not affect his right or the right of any other person to salvage.

The Oceans Act

INTERPRETATION

2. In this Act,

"Department" means the Department of Fisheries and Oceans;

"Minister" means the Minister of Fisheries and Oceans.

COAST GUARD SERVICES

41. (1) As the Minister responsible for coast guard services, the powers, duties and functions of the Minister extend to and include all matters over which Parliament has jurisdiction, not assigned by law to any other department, board or agency of the Government of Canada, relating to

(a) services for the safe, economical and efficient movement of ships in Canadian waters through the provision of

(i) aids to navigation systems and services,

(ii) marine communications and traffic management services

(iii) ice breaking and ice management services, and

(iv) channel maintenance;

(b) the marine component of the federal search and rescue program;

(c) pleasure craft safety, including the regulation of the construction, inspection, equipment and operation of pleasure craft;

(d) marine pollution prevention and response; and

(e) the support of departments, boards and agencies of the Government of Canada through the provision of ships, aircraft and other marine services.

95. The definitions “Department” and “Minister” in section 2 of the Canada Shipping Act are replaced by the following:

“Department” means, in section 385, the Department of Fisheries and Oceans;

“Minister” means, in section 385, the Minister of Fisheries and Oceans.

ADDENDUM

Forms

HOLD HARMLESS AND WAIVER OF CLAIMS

I, _____Master of the vessel _____

request the **CANADIAN COAST GUARD AUXILIARY (CCGA)** to render assistance by towing or other acts. In consideration for which I, for myself and the owners, and all persons on board, and our heirs and executors, **HEREBY AGREE TO HOLD HARMLESS AND WAIVE ALL CLAIMS** against the **CCGA**, the **CCGA** vessel, her owners, her master and crew, Her Majesty the Queen, Her Servants and Agents, for personal injury, death or property damage, resulting or arising (either directly or indirectly) from the endeavour to assist, or any abandonment or transfer of the assistance or tow.

Dated this _____ day of _____20___.

Signed _____

MASTER OF VESSEL DESIRING ASSISTANCE

Signed _____

WITNESS

SAR BRIEFING/TASKING FORM - MARINE

1. DTG.

2. SAR (Case Number)

3. Search Object:

   a) Type: (Aircraft/Vessel/Other - Delete as necessary)

   b) Name: _____

   c) Registration: _____

   d) Tonnage: _____

   e) Description: (Colour, markings, superstructure, characteristics)

   _____

   f) Owner/Operator/Agent: _____

   g) P.O.B.: _____

   h) Emergency equipment carried: _____

4. Nature of Distress or Emergency

   _____(Brief Description):

5. Search Area:

   a. Area corner points (Lat. & Long.): _____

   b. CSP (commence Search point): _____

   c. Direction of creep: _____

   d. Requested coverage factor: _____

   e. Requested track spacing: _____

   f. Requested search pattern: _____

6. (Other SAR facilities to be engaged in adjacent areas)

_____

Aircraft/Height: _____

Vessels: _____

Land Parties: _____

7. Frequencies and call signs to be used for communication with:

_____

a. JRCC/MRSC/OSC/SM (Delete as necessary). _____

b. Other search aircraft: _____

c. Other search vessels: _____

d. Land parties: _____

e. Ship or craft in distress/survivors: _____

8. Action on sighting the search object (delete as necessary).

Report to: _____

If unable to effect Rescue, Direct other vessels and/or aircraft to the scene.

Remain on scene until relieved or forced to return or rescue has been affected.

9. a. Progress reports should be passed to _____

b. Every _____hours.

10. Special Instructions: _____

_____

COLLISION, WRECK & INJURY REPORT

In every instance of a claim for collision, stranding, injury or other casualty, however small, the Auxiliary member is directed to complete both sides A and B of this form and telephone the details as soon as reasonably possible to the Regional Headquarters of the Auxiliary (collect) followed by dispatch of the form by mail or fax to the address or number below.

JRCC INCIDENT NUMBER: _____

AUXILIARY VESSEL:

Vessel Name:		Lic./Reg. No:	
Owner:		**Master**:	
Address:		Address:	
Phone:		Phone:	

OTHER VESSEL, PERSON OR PROPERTY (if involved):

Vessel Name:		Lic./Reg. No:	
Owner/Master:		Phone:	
Address:			

WITNESSES:

Name:		Address:	
Name:		Address:	

COMPLETE REVERSE AS REQUIRED AND SUBMIT TO:

Canadian Coast Guard Auxiliary
201 N. Front St., Ste. 703
Sarnia, Ontario N7T 8B1
Telephone: (519) 383-1964
Fax: (519) 464-5137

Side A

JRCC INCIDENT NUMBER:			**INCIDENT DATE:**	
VESSEL NAME:			**TIME OF INCIDENT:**	

DAMAGE DESCRIPTION:

Damage to Auxiliary vessel and/or personal injury. Describe and sketch additional information as required.		
Estimated Cost of Repairs: $		

ACCIDENT SCENARIO:

Indicate North and location of accident. Describe and sketch factors contributing to accident (eg., other vessel or obstruction, etc.).

Date: _____ Signature of Claimant: _____

Side B

CCGA INCIDENT LOG - CARNET D'INCIDENT DU SACSM

1. Incident No. N° de l'incident	Date (Y-A M D-J)
2. Time - Heure	Action Taken - Mesure prise
3. Other SAR resources involved - Autres ressources de recherche et de sauvetage en cause	
4. Auxiliary crew names - Noms des auxiliaires à bord	
5. Non-Auxiliary names - Noms des non membres participants	

6. Time - Heure	Radio Messages Sent/Received - Messages radio transmis/reçus

7. Wind speed/direction - Vitesse du vent/direction

Sea conditions - État de la mer

Visibility - Visiblilité

Other remarks - Autres remarques

Signature:

CCGA Owner/Operator - Propriétaire exploitant SACSM